11/23/87 U9660-2

THE MICHIGAN ECONOMY

Volume 6, No. 2 Spring 1987

Published by the Bureau of Business Research, School of Business Administration

Foreign Trade Zones in Michigan

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A Foreign Trade Zone (FTZ) is an enclosed, secure area in or near a port of entry which is considered outside U.S. Customs territory but under its supervision. They are U.S. versions of what are internationally referred to as "Free Trade Zones." An FTZ is operated by a qualified public or private corporation authorized by the Foreign Trade Zones Board under the Foreign Trade Zones Act of 1934. Foreign and domestic merchandise may be brought into a zone and stored, exhibited, repacked, assembled, combined with other foreign or domestic products, manipulated, or manufactured. Unless and until it enters U.S. Customs territory for domestic consumption, duties do not have to be paid.[1] The importer into the zone chooses to have the goods classified as "privileged" or "nonprivileged." The privileged classification allows duty to be assessed at the prevailing rate and in effect freezes the rate regardless of when the product is withdrawn from the zone. For the nonprivileged category, duty is applied on the condition of the product when it leaves the zone, and if it has been altered there, the duty could be lower on the finished product when it enters U.S. Customs territory.

Normal quota limitations do not apply on products entering an FTZ. Subzones at a company's existing facilities may be authorized by the FTZ Board, if it is economically infeasible for the firm to relocate to a general-purpose zone (GPZ). There can be significant benefits in using either GPZs or having portions of facilities classified as subzones. Companies could:

- Combine domestic and foreign components, paying duties on the foreign content of the finished product at a lower rate;
- Overcome quota restraints on imported goods;
- Wait for better market conditions, that is, store or exhibit goods indefinitely in a zone, duty free;
- Convert a product subject to quotas to one not subject to quota limitations;
- Inspect quality and specifications of imported products;
- Re-export goods without money being tied up in drawbacks, bond procedures, and the like;
- Alter, relabel, or re-mark imported products to meet federal, state, or local requirements;
- Borrow on the basis of goods stored in the zone, since warehouse receipts are issued;
- Attach a "Made in U.S.A." label to goods that qualify after value-added processes;
- Destroy substandard, defective products without paying duties.

These advantages to companies, reinforced by favorable regulatory changes and increased international competitive pressures, have resulted in a surge in the use of zones nationally. There has been a corresponding interest in FTZs by communities and business in the State of Michigan.

THE GROWTH OF FTZs IN THE UNITED STATES

Since 1981, the number of general-purpose zones has doubled, and there has been a sevenfold increase in the number of subzones (see Table 1).

Table 1. Number of Authorized FTZs in the United States

Fiscal Year	General-Purpose Zones	Subzones
1950	6	0
1965	7	2
1970	10	7
1975	18	5
1976	21	5
1977	30	6
1978	41	8
1979	49	10
1980	59	11
1981	67	14
1982	74	19
1983	81	33
1984	112	58
1985	124	85
1986	133	96

SOURCES: U.S. Department of Commerce, Foreign Trade Zones Board, Washington, D.C.; and National Association of Foreign Trade Zones, Washington, D.C.

During the same period, the value of shipments from FTZ increased tenfold (see Table 2). Most of the activity is

Support for this work has been provided by a grant/fellowship from the Faculty Research and Creative Activities Fund at Western Michigan University.

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Published bimonthly. Third class postage paid at Detroit, Michigan.
ISSN: 0730-272X

accounted for by subzones as manufacturers, particularly in the automobile industry, take advantage of zone privileges at their own facilities.

Table 2. Value of Shipments from FTZs in the United States, by Type of Zone, 1981–1985*

Fiscal Year	Total Shipments (millions $)	Subzones (millions $)	% of Total	General-Purpose Zones (millions $)	% of Total
1981	2,887	1,907	66	980	34
1982	3,932	2,408	61	1,525	39
1983	6,500	4,780	74	1,720	26
1984	18,578	16,163	87	2,415	13
1985	30,842	N.A.	N.A.	N.A.	N.A.

SOURCES: U.S. Department of Commerce, Foreign Trade Zones Board, Washington, D.C.; and National Association of Foreign Trade Zones, *FTZ Activity Survey, October, 1983-September 30, 1984.* (Washington, D.C.: February, 1986).
*NOTE: The share of shipments of general-purpose zones and subzones for 1984 has been estimated from National Association of Foreign Trade Zones, Preliminary *Summary Report of FTZ Activity Fiscal 1984* (Washington, D.C.: August, 1986).
N.A.: Not available.

REASONS FOR GROWTH IN FTZ ACTIVITY

The main reason for this increased usage has been the change in the regulatory environment for FTZs in the United States. When the original legislation was passed in 1934, proponents felt that FTZs would promote the use of U.S. ports for re-export and transshipment. Exporters would also be able to avoid burdensome processes, such as drawbacks and bonded warehouses. The congressional intent was to aid exporters competing in foreign markets.[2]

The 1934 act did not permit manufacturing in zones, but the Boggs Amendment, passed in 1950, allowed firms to conduct such activity.[3] Congress felt that this would enable companies to import components duty free, combine them with domestic products, and compete more effectively in foreign markets. In a later regulatory interpretation, the Foreign Trade Zones Board cleared the way for individual manufacturers to apply for zone privileges at existing plants. The board arguably reasoned that since manufacturing was permitted in GPZs, it was appropriate to grant zone privileges to firms at their present facilities if they could not economically relocate to zones [15 C.F.R., Sec. 400.304 (1969)]. At first these subzones had to be within thirty-five miles of a general-purpose zone, but subsequent interpretations become more flexible.

Permission to establish subzones combined with U.S. Treasury procedures allowing nonprivileged status for imported products meant a major benefit to firms facing "inverted" tariffs. With zone privileges, these companies would not have to pay duties on component parts, which were normally assessed higher rates, paying instead the lower duty on the finished products as they entered U.S. Customs territory. What is more, in 1980, Treasury decision 80-87 made it eminently more attractive for firms to apply for subzone privileges. Prior to this decision, U.S. Customs levied duties on zone processing, overhead, and labor costs. When the U.S. Treasury decided it was in the public interest not to do so, companies effectively paid lower duty only on the foreign content of the finished product. This last turn of regulatory events prompted a dramatic increase in subzone applications, including those by manufacturing enterprises in Michigan. Another added convenience was the decision by U.S. Customs to permit audit inspection at zones, which meant that personnel would not have to be stationed in the zones and companies could engage in self-monitoring.

These regulatory developments, along with increasing competitive demands to source components worldwide have contributed to the interest in FTZs evident in the State of Michigan.

MICHIGAN'S FOREIGN TRADE ZONES

The first Michigan FTZ was granted in September 1966 to Bay County. The general-purpose zone application was made specifically to allow Dow Chemical Company to set up two subzones in the vicinity. Dow wanted to store and process foreign petrochemicals on which import quotas were in effect. However, zone use did not materialize because the Interior Department placed restrictions on these subzones. Later in the 1970s import quotas on the petrochemicals were eliminated, the subzones were never activated, and Bay County voluntarily relinquished zone status in 1980.

The second FTZ was established in 1974 in Sault Ste. Marie. A number of firms had expressed an interest in using the zone, including an electronics parts manufacturer, a specialty tool and die company, a potential manufacturer of solid waste pumps, a stamping firm, an apparel manufacturer, and a recreational vehicle producer.[4] At present, a 12,000-square foot building is available for operations in a 64-acre industrial park, but no company has used the zone, which remains inactive.

The third FTZ in Michigan, one of the most active in the Midwest, was approved in 1978 and is located next to the W. K. Kellogg International Airport in the 2,600-acre Fort Custer Industrial Park in Battle Creek. BC/CAL/KAL Inland Port Authority, the operator of this zone, has engaged in an intensive marketing effort to promote the facility. Nine foreign firms, among others, have located in the zone and had invested $30 million by 1983. Table 3 provides indicators of activity in this zone between 1979 and 1983 (the latest year for which data are available).

Table 3. Merchandise Activity and Space Occupancy in the Battle Creek FTZ: FY 1979–1983

	Value of Merchandise in Zones (thousand $)			Merchandise Forwarded from Zones (thousand $)			
Fiscal Year	Foreign Origin	Domestic Origin	Total	To U.S.	To Other Countries	Total	Space Occupancy (%)
1979	967	—	967	1,748	67	1,815	31
1980	1,714	2,412	4,126	4,554	315	4,869	70
1981	3,997	1,875	5,872	4,003	733	4,736	85
1982	5,362	1,672	7,034	5,575	506	6,081	85
1983	8,130	45	8,175	6,239	868	7,107	88

SOURCES: U.S. Department of Commerce, *Annual Report of the Foreign Trade Zones Board*, 1979-1983, various issues, (Washington, D.C.)

During the Battle Creek FTZ's five years of operation, the number of firms using the facilities increased from eleven to twenty and products from eight countries entered the zone. In 1983, the five leading countries which sent products to the zone were Japan ($5.5 million), West Germany ($1.5 million), the People's Republic of China ($435,000), Taiwan ($422,000)

and Canada ($376,000). The five leading products brought in from foreign countries were titanium ($3.3 million), auto parts ($1.3 million), conveyor parts ($855,000), grinding machines ($582,000), and mushrooms ($423,000).[5]

Notably, several Japanese automotive suppliers have established distribution centers in the Battle Creek FTZ in response to the automobile manufacturers' "just-in-time" inventory requirements. Parts are shipped in large quantities from Japan to the zone, where they are stored duty free and available in close proximity to the industry. These components can also be shipped directly to subzones of the automobile producers and be assessed lower duty rates after they have been incorporated into automobiles. In general, the Battle Creek zone is used by companies to conduct a variety of operations very much in keeping with the benefits of zone usage noted earlier (see Table 4).

Table 4. Functional Operations in the Battle Creek Zone

Imported Products	Functional Activity
Auto parts	Warehouse, distribute
Band saws	Inspect, warehouse, distribute
Clothing	Warehouse
Conveyor parts	Examine, warehouse
Oriental rugs	Examine, mark country of origin
Powdered milk	Test for grade and quality, destroy substandard material, warehouse
Projection form	Display, demonstrate
Grinding machines	
Radios, cassettes	Test, send to subzones
Surgical equipment	Examine, manipulate, re-export
Titanium	Test, warehouse

SOURCE: U.S. Department of Commerce, *45th Annual Report of the Foreign Trade Zone Board*, (Washington, D.C., January 1986).

Battle Creek's regular promotional and educational programs directed at potential users are expected to result in increased zone activity in the future. Such programs, which include participation in trade missions to Japan and Europe, have resulted, for example, in Nippondenso, a Japanese auto supplier, announcing plans to build a $100 million facility in the Fort Custer Industrial Park, where the zone is located.

Detroit's application to establish zones in that community was approved in 1982. The Greater Detroit Foreign Trade Zone, Inc., a nonprofit corporation, was the grantee and has since licensed two operators to run two general-purpose zones, both of which have had very limited activity. However, there has been heightened interest among area manufacturers in obtaining zone privileges through subzone status, most of it expressed by the automotive manufacturers. This is because of the inverted tariffs in the automobile industry; duties on the finished product are 2.9 percent, whereas those on component parts can range from 3-15 percent.[6] Nine subzones have already been approved in the Detroit area (see Table 5), and other applications are pending before the FTZ Board.

The interest in subzones on the part of Michigan automobile manufacturers parallels national trends. Motor vehicles, including motorcycles, accounted for about 60 percent of all shipments from subzones in 1982.[7] Applications filed with the Foreign Trade Zones Board suggest that inverted tariffs are a major reason for requesting subzone status. Ford Tractor, for example, noted that imported components, such as seats, instrument panels, starter motors,

Table 5. Subzones in the Greater Detroit Area, 1986

Subzone	Company	Location	Date of Subzone Approval
70A	Ford Tractor	Romeo	7/12/81
70B	Chrysler	Detroit	1/12/82
70C	Ford	Wayne	1/24/83
70D	Ford	Wixom	9/29/83
70E	Ford	Dearborn	9/29/83
70F	General Motors	Willow Run, Ypsilanti	7/26/84
70G	General Motors	Pontiac	7/26/84
70H	Chrysler	Sterling Heights	4/10/85
70I	Mazda	Flat Rock	4/1/86

engine flywheels, pumps, valves, and hoses have duty rates ranging from 2.9-17.6 percent. The finished products, tractors, enter duty free. Chrysler, in its application, referred to a 2.6 liter engine which would have a duty of 3.8 percent if imported as a component; as part of the finished product, the engine would be assessed at 2.9 percent, for a savings in duties of more than $300,000 a year. Ford noted it was purchasing $45 million in dutiable products at the time it applied for subzone status. The company referred to products such as transmisions, engines, and radios as having higher duty rates, ranging from 3.6-9.2 percent compared to the duty on the finished product. General Motors estimated duty savings of $1.4 million at the Willow Run plant and $1 million at the Pontiac plant or $7 per car at Willow Run and $5 per 1.8 liter engine at Pontiac. Mazda, in its application for subzone status for its Flat Rock plant, estimated initial duty savings of $31 per car.[8]

These companies point out that in addition to duty savings they would be able to inspect quality, discard defective products, maintain adequate supplies, accommodate just-in-time inventory systems, reduce customs administrative costs, and avoid traditional customs procedures, such as drawbacks and bonded procedures.[9]

Table 6 and 7 provide information on activity in three subzones in the greater Detroit area. As Table 7 indicates, most of the shipments from the greater Detroit subzones enter the United States.

In April 1987 Flint was granted permission by the FTZ Board to establish a GPZ which would accommodate, among others, Cirtek, a manufacturer of circuit boards, electronics, and electromechanic assemblies. Cirtek, which primarily faces Japanese competition, cites that such imported components as diodes, transistors, and integrated circuits have duty rates ranging from 3.1-4.5 percent versus lower duties on the finished product. The company suggests that subzone privileges would enable it to quote lower prices for its products because of duty savings.

In addition, Flint has obtained approval for a subzone for the General Motors Buick facility. In the case of GM, the rationale presented was that of the automobile producers discussed earlier. Dow Chemical has also requested subzone status for its Midland plant. The company states that subzone status would allow continued manufacture of a product versus ceasing production in the U.S. Dow imports a substance, Terfenadone, and processes it into Terfanadine, an active ingredient in its antihistamine product. Since Terfanadine can enter the United States duty free, whereas Terfenadone has a duty of 13.5 percent, the company is

Table 6. Selected Data on Product Movement in Three Subzones in the Greater Detroit Area

	Products Received		Products Forwarded		
Subzone Name (#)	Country of Origin	Components	Products	Destination	Value (thousand $)
Romeo (70A)	United Kingdom	engines, flywheels, hydraulic lifts, hydraulic pumps, power steering pumps, starter motors, tractor parts	Agricultural tractors	U.S., Canada, Egypt, Spain, Zimbabwe, Venezuela, Costa Rica, Indonesia, Ecuador, Sri Lanka	170,744
	Belgium	rear axles, transmission	Industrial tractors	Canada, U.S., Egypt, Columbia, New Zealand, Malaysia, Virgin Is., Italy, Bahamas, Australia	99,056
	Canada	wiring harnesses			
	Brazil	radios			
	U.S.	raw materials, air conditioners, tires, wheels	Tractor parts	U.S., France, U.K., Belgium, W. Germany	6,619
Detroit (70 B)	U.S.	miscellaneous auto parts	Automobiles	Canada, U.S.	2,585,100
	Japan	engines			
Wayne (70 C)	Italy	aluminum wheels	Automobiles	U.S., Canada	935,800
	Japan	diesel engines, transaxles			
	U.K.	steering gears			
	Brazil	electronic components			
	Canada	auto parts			
	U.S.	auto parts			

SOURCE: *45th Annual Report of the Foreign Trade Zone Board*, U.S. Department of Commerce, (Washington, D.C., January 1986), pp. 220-309.

considering discontinuing Terfanadine production and importing it from European sources. The Company points to the reduction in employment if it is forced to do so and is requesting subzone status.[10]

Another community which has expressed interest in establishing an FTZ is Grand Rapids. At present, feasibility of a Grand Rapids-Muskegon Trade Zone is being determined. Amway is one of the firms supporting the concept. Furniture companies in the area could have substantial benefits—duty on fabric for chairs is about 16 percent, whereas that on chairs is 6 percent—and subzone privileges could thus save them about 10 percent on duties.[11]

There is considerable interest in the zone concept in Michigan. Communities view FTZs as an additional incentive for companies to locate in their region and as contributing towards maintaining investment and employment. Nevertheless, the concept is not without its detractors.

CONCERNS ABOUT FTZs

The major criticism of FTZs is that zone privileges effectively circumvent congressional tariff policy. Opponents contend that FTZs were intended to promote U.S. exports abroad, not shipments to the United States. Nationally, producers of iron and steel, electronic components, textiles, and bicycles have been the most vocal objectors. It is interesting that automotive parts suppliers have not been strong protestors. Among the labor unions, the AFL-CIO has opposed FTZs, arguing that they do not increase employment but merely shift jobs from one geographic area to another. The UAW has adopted a more moderate view yet calls for manufacturing to be eliminated as permissible in FTZs; if that is not done, then

Table 7. Selected Data on Activity in Three Subzones in the Greater Detroit Area, 1983

	Merchandise Received			Merchandise Forwarded		
			(thousands $)			
Subzone	Foreign Origin	Domestic Origin	Total	To U.S.	To Other Countries	Total
Romeo (70A)	21,900	22,800	44,700	257,900	19,400	277,300
Detroit (70B)	5,500	65,200	70,700	2,296,100	289,000	2,585,100
Wayne	4,900	30,300	35,200	878,000	57,800	935,800

SOURCE: 45th U.S. Department of Commerce, *Annual Report of the Foreign Trade Zone Board*, (Washington, D.C., January 1986).

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Professional Nurse "Shortage"

by JESSE S. HIXSON, *Assistant Professor, Department of Economics, Michigan State University*

The past two decades have witnessed much discussion of a "shortage" of registered nurses in the nation's hospitals. One widely used measure of this "shortage" is the difference between the number of nurses in practice and the number deemed necessary to provide some desired standard of nursing care for the population of a given area. Others gauge the shortage as the need expressed by hospitals for additional personnel. Still a third yardstick is the number of vacant budgeted positions for nurses in hospitals.

The common denominator of these widely used definitions of shortage is a concept of need which neglects economic considerations. The "need" for nurses is relevant in the economic sense only if expressed by effective demand in the labor market. Objective evaluation of the shortage must be based on analysis of the demand and supply of professional nurses.

CHARACTERISTICS OF THE NURSE FORCE

Nursing is a female-dominated profession—of the total number of professional nurses in the United States, 99 percent are women. One-third of all professional nurses who hold licenses to practice are not employed in nursing; about 85 percent of these non-practicing nurses are married.

Roughly two-thirds of the practicing registered nurses are employed by hospitals. Of the total number of hospital nurses, about 60 percent are general duty nurses (not in administrative positions); in other words, over 40 percent of the active professional nurses are employed as general duty nurses in hospitals. In addition, a large number of self-employed private duty nurses practice in hospitals, but the exact number is not known. About 30 percent of all hospital nurses work on a part-time basis; part-time nurses compose a growing proportion of the hospital nurse force.

In 1963, the average annual earnings figure for classroom teachers was $1,464 above that for general duty hospital nurses. In the same year, average earnings of general duty nurses in non-government hospitals were consistently below those of secretaries (whose jobs do not necessarily require post high-school education) employed in the same cities. The wages of industrial nurses are consistently above those of hospital nurses.

A baccalaureate degree in nursing is clearly worth less than the equivalent degree in education. A nursing diploma (a degree earned from a hospital school of nursing) requires a smaller investment than a baccalaureate degree and therefore offers a higher rate of return on investment than a baccalaureate degree to the general duty nurse. However, the rate of return on a diploma is well below that on an investment in a secretarial course. The structure of wage rates in these female-dominated occupations, and the implied rates of return on their requisite educational investments, suggests that the decision to enter nursing is weighted heavily by non-pecuniary considerations.

Investigators who have examined the charcteristics of the pool of inactive nurses have found that reasons for their reluctance to re-enter the work force include family responsibilities, poor hospital working conditions, inadequate opportunity for advancement, and lack of confidence in their abilities to perform the required tasks after a period of inactivity. Results of questionnaire surveys of inactive nurses show that the salary level in hospital nursing is not an important factor in their expressed reasons for deciding to leave or not to re-enter nursing. However, the apparent insignificance of the wage level represents the cost to an inactive nurse of pursuing other activities and is the fulcrum upon which the alternatives are balanced when the choice of action is made. There is a wage that will draw every trained nurse into the work force; that wage is the one which will make nursing more attractive than any other activity available to the most reticent in the pool of inactive nurses. In fact, calculations based upon nursing employment and wage levels in Michigan counties indicate that a 4 percent increase in the wage level, on the average, will produce about 1 percent increase in the proportion of licensed nurses who are active. Although the relationship between wages and employment is probably inelastic, it cannot be said to be insignificant.

In addition to the low relative wage level and the high rate of inactivity among trained nurses, an interesting and suggestive statistic is the turnover rate of hospital nurses. Surveys conducted throughout the past decade have revealed that, on a national basis, the turnover rate of professional staff nurses has consistently averaged 67 percent annually. Thus, on the average, hospitals must replace two-thirds of their nurse force every year. It appears, therefore, that nurses command a great deal of freedom with respect to the choice of accepting or rejecting employment, and that the nurse "shortage" is related to hospital ability to induce nurses to remain employed rather than to their success in initial hirings.

RESULTS OF A STUDY

In order to gain further insight into the question of the nurse "shortage," a study of the nurse supply was conducted to determine how nurses respond to differences in wages and working conditions between hospitals in their decisions respecting employment. The ramifications of the notoriously high turnover rate cited above suggested that it would serve well as the dependent variable in the analysis. Complete information about working conditions is obtained after an individual accepts employment at a specific wage rate. Voluntary termination at the same wage (assuming other factors, such as family status, remain unchanged) is a manifestation of dissatisfaction with working conditions. A high frequency of turnover for a hospital would therefore indicate unfulfilled expectations with respect to working conditions, and the proportion of turnover due to inter-hospital differences in wages and working conditions can be isolated with statistical techniques.

From data collected from a sample of short-term general hospitals in Michigan, the following variables were developed:

Reprinted from *The Michigan State Economic Record*, June 1969, Vol. 11, No. 6, pp. 3, 5, and 6. *TMSER* ceased publication in June 1981.

—the turnover rate of general duty registered nurses
—general duty registered nurses per average daily census
—practical nurses per average daily census
—nursing aides per average daily census
—ratio of general duty registered nurses to practical nurses
—ratio of general duty registered nurses to nursing aides
—monthly starting wage of general duty registered nurses
—a "work assignment" variable classifying hospitals according to whether nurses were shifted between services in the hospital.

"Average daily census" pertains to patients in medical, surgical, intensive care, and cardiac units only. The analysis was restricetd to these services in order to maintain a high degree of homogeneity in patient characteristics between units of observation. Obstetrics, psychiatric, or long-term patients, for example, require nursing care quite different from those in medical-surgical units of a hospital. An additional variable classifying the local nurse force as "permanent" or "transitory" was employed to isolate the effects on turnover when a hospital draws part of its employees from a relatively transient population. Since turnover in hospitals employing student wives or spouses of military personnel is higher than that in hospitals serving isolated rural areas, this classification isolated these effects from the effects of wage and working condition differentials.

Theoretical considerations, as well as the statistical techniques employed in the analysis, suggest that the ratios of nursing and aide personnel to average daily census can be interpreted as measures of the "quality" of nursing care in the sense that more personnel per patient implies more intensive care. The ratios of general duty registered nurses to practical nurses and nursing aides have implications for working conditions in the sense that although various combinations of personnel can produce a given quality of care, each combination implies a different set of working conditions for the registered nurses. The work assignment classification also has implications for working conditions if nurses prefer to specialize in the care of particular types of patients. Presumably, both "quality" of care—judged from the viewpoint of professional standards—and "working conditions"—judged from the viewpoint of work assignment stability, intensity of effort, and responsibility—will enter into evaluations of the working environment.

The statistical analysis of the data revealed that the ratios involving practical nurses have no significant relationship or explanatory power with respect to the turnover rate or supply of nurses. Two of the ratios—general duty registered nurses per average daily census and general duty nurses to nursing aides—display a significant negative relationship with the turnover rate, while the ratio of nursing aides per average daily census is positively related to the turnover rate. The relationship between the "work assignment" variable and turnover is negative, an indication that nurses prefer not being shifted between services in a hospital.

A positive association found between monthly wages and turnover may be a statistical fluke. The wage rate is also positively related to the transitory labor force indicator which, in turn, is positively correlated with the turnover rate. Thus, the wage rate is a proxy for transitivity and its separate effect cannot be isolated for measurement.

Although the underlying implications of the significant ratios for working conditions are a conjectural matter, it seems reasonable to suppose that lower ratios of general duty nurses to nursing aides require greater supervisory responsibility and less participation in direct patient care by registered nurses. These results are consistent with the suggestion that requiring nurses to function in supervisory and administrative roles may offend sensibilities instilled during professional training that places primary emphasis on direct patient care. The positive effect on the turnover rate of increasing the ratio of nursing aides to patients while holding constant the ratio of registered nurses to patients may imply that nursing aides make a negative marginal contribution to patient care in the opinion of professional nurses. This result may derive from the nurses' increase in supervisory responsibility, or the presence of aides may simply have an unpleasant connotation for professional nurses.

The general results of the study imply that the ability of hospitals to attract and retain a professional nursing staff is directly affected by their willingness to appeal to nurses' professional sensibilities. Irrespective of the sensitivity of the nurse supply to the level of wages, hospitals have at their disposal a variety of parameters of action which have a significant impact on nurses' employment decisions.

CONCLUSION

In the short-run, the nurse "shortage" is a function of hospital behavior rather than of conditions in the labor market. The shortage of nurses is a result of hospital unwillingness to pay the price required to induce nurses to remain permanently active rather than a property of the nurse supply which would render it unresponsive to incentives offered by hospitals. Thus, whereas hospitals which relegate nurses' professional sensibilities to a second order of importance in employment decisions are prone to complain that nurses are not available in the labor market, hospitals which pursue an explicit strategy to minimize turnover by offering appropriate incentives experience no "shortage." It should be observed, however, that although high turnover of professional nurses may be costly and inefficient, the cost of reducing turnover may also be high; thus, the least-cost combination of nursing personnel and employment policies in some situations may yield a relatively high rate of turnover.

The implications for the long-run are more pervasive. The high rate of inactivity in the nurse force represents inefficient utilization and waste of human capital. At the root of this basic problem are several factors which must change significantly. Of fundamental importance is the fact that, whereas hospitals are demanding more and more that professional nurses possess supervisory and management skills, nursing education does not appear to be responding in the appropriate fashion to meet this change in the character of demand. Thus many new graduate nurses are alienated when required to assume roles for which they are unprepared. Furthermore, it is often suggested that the trend toward baccalaureate programs at the expense of diploma schools has resulted in a loss of emphasis on patient care skills in the educational process. Again, the reluctance of employers to offer on-the-job training or orientation to new graduates is responsible for the failure of an increasing number of new graduates to pursue careers in hospital nursing. To a large extent there appears to be a breakdown in communication between educators and employers with regard to the respective roles of each in the education and preparation of nurses to function

in an industry characterized by rapidly changing technology and organization of production.

But more important however is the fact that the nursing profession, traditionally female-dominated, evidently cannot attract into its ranks a significant number of career-oriented persons. In addition to the female stigma of the profession, the low wage level precludes heads of families (males) from pursuing a nursing career. Until pecuniary returns in nursing are sufficient to attract professionals whose employment provides the main source of income to the family unit, the present character of the nurse force with its attendant problems for economic efficiency will prevail.

Brief

Regional differences in per capita personal income generally widened from 1979 to 1986, according to the Commerce Department's Bureau of Economic Analysis. From 1929 to 1979, in contrast, regional differences in per capita income had narrowed.

In the Mideast and New England regions, per capita income in 1986 was further above the U.S. average, in percentage terms, than it was in 1979. In the Rocky Mountain, Plains, and Southwest regions, per capita income was further below the U.S. average in 1986 than in 1979. As a percent of the U.S. average, per capita income fell from above to below average in the Great Lakes region and changed little in both the high-income Far West and the low-income Southeast regions.

Per capita personal income for a region can change relative to the U.S. average because its total personal income, its population, or both, grow at a faster or slower rate than the U.S. average. In the Far West region, for example, a below-average gain in per capita personal income—6.8 percent in the region compared with the U.S. average of 7.1 percent—reflected rapid growth in population—2.0 percent compared with the U.S. average of 1.0 percent—that more than offset rapid growth in total personal income—8.9 percent compared with the U.S. average of 8.2 percent.

	Per capita personal income relative to the U.S. average		Per capita personal income	Total personal income	Population
	1979	1986	(average annual percent change, 1979–86)		
	(percent)				
Far West	114	112	6.8	8.9	2.0
Mideast	106	113	8.1	8.4	0.2
New England	104	117	9.0	9.5	0.4
Great Lakes	104	99	6.4	6.4	0
United States	100	100	7.1	8.2	1.0
Plains	99	96	6.6	7.1	0.4
Rocky Mountain	96	90	6.1	8.0	1.7
Southwest	95	90	6.3	9.0	2.6
Southeast	85	87	7.4	9.0	1.4

In the Mideast and New England regions, rapid growth in total personal income and slow growth in population led to above-average gains in per capita income. Personal income was boosted by large earnings increases in service-type industries, including banking, brokerage, legal, business, and health services. In New England, personal income also was boosted by large earnings increases in high-technology electronic, computing, and defense industries. Population growth in the Mideast and New England was dampened by relatively high housing costs, which discouraged workers from migrating to these regions despite increased job opportunities.

In the Great Lakes region, slow growth in total personal income accounted for a below-average gain in per capita income; population was unchanged. Personal income growth was dampened by small earnings increases in relatively old manufacturing industries, such as iron and steel, fabricated metals, and nonelectrical machinery, which attracted little capital investment. Earnings increases in construction and trade were small, as zero population growth adversely affected the demand for housing and consumer goods.

In the Plains and Rocky Mountain regions, slow growth in total personal income contributed to below-average gains in per capita income; rapid population growth also contributed in the Rocky Mountain region. In both regions, personal income growth was dampened by small earnings increases in industries adversely affected by weakness in farming and in oil prices and production.

In the Southwest region, a below-average gain in per capita income after 1982 more than offset an above-average gain from 1979 to 1982; the net result was a below-average gain in per capita income from 1979 to 1986. From 1979 to 1982, rapid growth in total personal income due to boom conditions associated with rising oil prices accounted for the above-average gain in per capita income; population also grew rapidly. After 1982, slow growth in total personal income and continued rapid growth in population led to a below-average gain in per capita income. The rate of growth of total personal income had slowed even before the collapse of oil prices in 1986.

In the Southeast region, above-average gains in per capita income in the states along the Atlantic Coast, plus Tennessee, more than offset below-average gains in the other states; the net result was an above-average gain in regional per capita income. In each of the Atlantic Coast states, rapid growth in total personal income accounted for above-average gains in per capita income, despite rapid growth in population. Personal income growth was stimulated by earnings increases in defense-related industries and in banking, business, and health services. In the states with below-average gains in per capita income, slow growth in total personal income was the major restraining factor; population also grew slowly. Personal income growth was adversely affected by small earnings increases in farming and coal mining and in related manufacturing industries, including food processing and primary metals.

Personal income is the income received by persons from all sources, that is, from participation in production, from government and business transfer payments, and from government interest. Personal income is the sum of private and government wage and salary disbursements, other labor income, farm and nonfarm proprietors' income, rental income of persons, personal dividend income, personal interest income, and transfer payments, less personal contributions for social insurance. Personal income is measured before the deduction of personal income taxes and other personal taxes and is reported in current dollars (no adjustment is made for price changes).

Per capita personal income is the annual total personal income of residents divided by the resident population as of July 1.

THE MICHIGAN ECONOMY
Bureau of Business Research
School of Business Administration
Wayne State University
Detroit, Michigan 48202
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THE MICHIGAN ECONOMY

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FOREIGN TRADE ZONES *(Continued from page 4)*

zone status should be given at the industry level to all plants. These controversies are likely to continue and have resulted in the FTZ Board becoming more stringent in approving subszones.

CONCLUSIONS

Under current regulatory conditions, it is likely that interest in FTZs will continue nationally as well as in the State of Michigan. The pattern of FTZ growth in Michigan should be expected to follow national trends—the greatest activity is likely to occur in subzones. Interest in general-purpose zones will be limited and largely dependent upon the marketing efforts of FTZ operators to communicate zone benefits to potential users.

CITATIONS

1. Foreign-Trade Zones Act, Public Law 397, 73rd Congress, approved June 19, 1934 (48 Stat. 998-1003; 19 U.S.C. 81a-81u), as amended by Public Law 566, 81st Congress, approved June 17, 1950.

2. U.S. Congress, 1933. Subcommittee of the House Committee on Ways and Means. *Hearings on H.R. 4726 and H.R. 9206*. 72nd Congress, 2nd Session (12) 1933.

3. U.S. Congress, 96 Congressional Record (195), Amendment, June 17, 1950.

4. State of Michigan, Department of Commerce. *Bay County, Michigan, Foreign Trade Zone Applications*, on record at the office of the U.S. Department of Commerce, Foreign Trade Zones Board, Washington, D.C.

5. *45th Annual Report of the Foreign-Trade Zones Board to the Congress of the United States*, for the fiscal year ended Sept. 30, 1983. (Washington, D.C.: U.S. Government Printing Office), 1986.

6. Joseph Auwers, Greater Detroit Foreign Trade Zone, Inc., Detroit, Michigan, personal interview, May 1986.

7. U.S. International Trade Commission, *The Implications of Foreign-Trade Zones for U.S. Industries and for Competitive Conditions Between U.S. and Foreign Firms*. Washington, D.C., 1984, p. 7.

8. Greater Detroit Foreign Trade Zones, Inc. *Detroit Subzone Applications*, on record at the office of the U.S. Department of Commerce, Foreign Trade Zones Board, Washington, D.C.

9. Ibid.

10. City of Flint, Michigan, *Foreign Trade Zone and Subzone Application*, on record at the Office of the U.S. Department of Commerce, Foreign Trade Zones Board, Washington, D.C.

11. Denise Smith, "Foreign Trade Zone Offers Savings, Jobs," *Grand Rapids Press*, October 17, 1985, pp. D1-D2.

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THE MICHIGAN ECONOMY

Volume 6, No. 3 Summer 1987

Published by the Bureau of Business Research, School of Business Administration

Detroit Update

by DAVID I. VERWAY, *director, Bureau of Business Research, School of Business Administration, Wayne State University*

According to recent tabulations from the Budget Department of the city, Detroit had more taxpayers in 1985 than it did in 1984. This was the first year-to-year increase since 1979.

On the east side of Detroit, the city is purchasing and clearing real estate for a new Chrysler assembly plant. The move parallels the creation of GM's Hamtramck/Detroit (Poletown) Assembly Plant a few years ago. GM makes its new generation of sport/luxury Cadillacs, Buicks, and Oldsmobiles in Poletown.

Detroit City Airport runways are being lengthened to accommodate larger aircraft. This extension will relieve Metropolitan Airport as well as bring new business to the east side. It also will improve access between the new GM and Chrysler assembly plants and their distant suppliers. The new Cadillac Allante, assembled at the Poletown Plant, has bodies made in Italy by Pininfarina and flown from Turin to Detroit.

Other recent upbeat news from the city includes the opening of the Detroit People Mover and its initial success in attracting riders; the opening of Stroh's River Place in the vast assemblage of buildings vacated by Parke Davis several years ago; the opening of ANR's Riverfront, just east of the Stroh development; and several new restaurants downtown. The Cobo Hall expansion is proceeding on schedule. Stroh's is building a new office complex from the ground up on land where the company made beer last year. Nearby in Eastern Market, new warehouses and retail establishments are rising. Little Caesar Enterprises, Incorporated, will move its headquarters from Farmington Hills to downtown Detroit, in a development that also will produce a revitalized Fox Theater. Planning is underway for the renovation of the nearby State and Gem theaters and other properties just north of Grand Circus Park. A mile north, Orchestra Hall, the new home of the Detroit Symphony Orchestra, is being refurbished. In the nearby medical complex, plans are well along for a new Veterans Administration Hospital to replace the antiquated facility in Allen Park. Another new office building at 150 West Jefferson and an apartment building near Riverfront West are planned for the downtown vicinity.

Uptown, the St. Regis Hotel is doubling its capacity. A comprehensive streetscape redevelopment program is recreating "Grand" Boulevard. Ultimately, the area from Henry Ford Hospital to GM's Poletown Assembly Plant will sparkle again.

In short, as matters now stand, the area bounded by the Detroit River, the Lodge Expressway (U.S. 10), the Ford Expressway (I-94), and the Grosse Pointes will have lost much of its tarnish, and accumulated much new lustre, by the end of the decade. So much for the lower east side.

The quid pro quo for GM's new Poletown is closure of the ancient Cadillac Fleetwood Assembly Plant on the west side. GM also expects to close two nearby components plants. Unlike the 1960s, GM also is saddled with the industry's highest labor cost. To improve its competitive position, the company is shifting to outside suppliers insofar as possible.

The downriver area already has been hit hard by the declining demand for steel, castings, and forgings. Closure of the GM facilities will further depress the west side through reduced demand for local supplies and services to run the plants as well as through the cutback in spending by workers in the vicinity.

In fact, except for the lower east side and isolated sections of the city such as Chrysler's investment in its glass plant and the neighborhood plan for the University of Detroit environs, Detroit's outlook is clouded by the prospects of more factory and commercial closures and a further diminution of its middle class. In 1990 for the first time in decades, the possibility is very real that the city's population count will fall short of 1,000,000. By the turn of the century, chances are that fewer than 900,000 people will call Detroit home.

By 2000, the greater likelihood also is that the ranks of the unemployed and of the poor will be much diminished. A combination of renovation and new construction, national labor shortage, and a depletion of worn out assets during the next fifteen years will improve the balance between goods and services produced within the city and demanded by customers living here and elsewhere.

OUR HERITAGE

Government statisticians first recognized automobile manufacturing as a distinct industry in the Census of Manufactures for 1905. There it is recorded that 9,023 of the 20,161 motor vehicles made in the United States rolled out of Michigan factories during 1904. In 1914, Michigan produced 443,072 cars, trucks, and buses out of a national total of 569,054. Production here and nationally continued to grow unevenly until 1929. Michigan was a leader out of the Great Depression, setting new vehicle production records by 1935.

Wayne State University
Detroit, Michigan 48202

Published bimonthly. Third class postage paid at Detroit, Michigan
ISSN: 0730-272X

To satisfy the burgeoning demand for Michigan-made cars and trucks, employers recruited laborers from rural Michigan and from Ohio, Kentucky, Tennessee, and other eastern states, as well as from Canada, Ireland, England, France, Poland, and other European countries. The news of high wages in Detroit, Flint, Saginaw, Muskegon, and other automotive centers also reached Mexico, the Middle East, and more distant lands. As a result, although 3 percent of the U.S. population resided in Michigan in 1910, by 1920 the figure was 3.5 percent, in 1930, 3.9 percent, and in 1940, 4 percent.

During World War II, Southerners flocked to Michigan, the "Arsenal of Democracy." After the war, pent-up vehicle demand spurred Michigan's economy until the late 1940s. The Korean War was the stimulus during the early 1950s. In 1950, 4.2 percent of the nation's inhabitants lived in Michigan. The peak, 4.4 percent, was reached in 1956.

With the 1956 model year, manufacturers began to retrench because of a saturated vehicle market. The level of employment in the state declined by 300,000 between 1955 and 1961. The proportion of the population residing here slipped every year between 1956 and 1963.

Few experts in 1961 sensed the magnitude of demand for large passenger cars, station wagons, and pick-up trucks for personal use and that Michigan would experience another mighty economic boom. Between 1961 and 1965, Michigan's vehicle production doubled. In a replay of the 1930s, from being among the most depressed, Michigan became one of the most labor-scarce states, again recruiting southern workers.

DETROIT'S POPULATION

In 1900, about one in eight Michiganians lived in the city of Detroit. By 1930, the figure was one in three. Detroit's population peaked during the 1950s, probably in 1953. At the time of the 1950 Census of Population, Detroit's 1,849,568 residents represented 29 percent of the Michigan population. Between 1950 and 1960, the city's population declined by nearly 10 percent and between 1960 and 1970 by another 9 percent. Meanwhile, the suburbs, including those in western Wayne County, continued to grow. Since 1970, the population of western Wayne County also has declined, but not as rapidly as Detroit's. By 1986, the date of the most recent population estimates for the city, the population of Detroit was below that of the rest of Wayne County for the first time. Today about one in eight Michiganians lives in Detroit (see Table 1).

Tabulations from the 1980 Census of Population show that, compared with the movement of whites from the suburbs to the city, Detroit experienced a heavy out-migration of whites to the suburbs between 1975 and 1980. The net result was a 100,000 population loss of whites to the suburbs. Among blacks, there was a 5,000 net loss to the suburbs. About 150,000 whites left the area for other parts of the country during the half decade, whereas few blacks left. Meanwhile, about 32,000 blacks arrived in Detroit from the rest of the country.

Much the same pattern of differential migration has affected other metropolitan areas of the country. According to one recent study,

> during the 1960-1980 period, in most large SMSAs, minorities and non-Hispanic whites have become geographically polarized relative to one another. The most extreme case is the Detroit SMSA.[1]

Table 1
Population of Detroit, Wayne, Oakland, and Macomb Counties, and the State of Michigan: Census 1900–1980 and Intercensal Estimates for 1981–1985

		County			
Year	Detroit	Wayne	Oakland	Macomb	Michigan
1900	285,704	348,793	44,792	33,244	2,420,982
1910	456,766	531,591	49,576	32,606	2,810,173
1920	993,678	1,177,645	90,050	38,103	3,668,412
1930	1,568,662	1,888,946	211,251	77,146	4,842,325
1940	1,623,452	2,015,623	254,068	107,638	5,256,106
1950	1,849,568	2,435,235	396,001	184,961	6,371,766
1960	1,670,144	2,666,297	690,259	405,804	7,823,194
1970	1,514,063	2,670,368	907,871	625,309	8,881,826
1980	1,203,339	2,337,891	1,011,793	694,600	9,262,078
1981	n.a.	2,289,435	1,005,909	691,855	9,209,885
1982	1,156,522	2,242,437	999,744	687,698	9,116,968
1983	n.a.	2,204,146	997,648	684,670	9,053,656
1984	1,126,872	2,185,900	1,005,845	687,738	9,058,432
1985	n.a.	2,174,338	1,014,102	689,681	9,088,341
1986	1,082,220	2,164,300	1,025,800	697,200	9,144,500

SOURCE: Bureau of the Census, *U.S. Census of Population: 1980, Number of Inhabitants—Michigan* (Washington, D.C.: 1982), PC80-1-A24, and similar documents for previous years and special releases; and Michigan Department of Management, special release.
n.a.: Data not available.

Polarization measures the percentage-point difference between an SMSA's central city and its outer cities in their respective proportions of non-Hispanic whites. In 1960, Detroit was 70 percent non-Hispanic white compared with 96 percent in the suburbs. Polarization, accordingly, was 26. In 1980, the proportions were 33 percent and 93 percent for a polarization rate of 60. The difference between the 1960 and 1980 figures, which was 34, is the polarization rate. In layman's argot, this means white flight. Between 1960 and 1980, the rate of white flight from Detroit to its suburbs was greater than that from any other major city in the country.

Who left? Much of the exodus was white, middle-class families. Who stayed? Blacks, the elderly, and the poor. The net result is a very high proportion of elderly whites and a very low proportion of young whites. These highlights are reproduced in Table 2.

Hard data on Detroit-area migration patterns since the 1980 Census of Population are not available. Evidence from a small, random sample of area households suggests that the white population of the city has continued to decline and that the black population of the city has continued to rise since the turn of the decade. By 1990, the city will be about 75 percent black, compared with 63 percent in 1980 and 44 percent in 1970.

DETROIT'S JOB BASE

In 1947, there were 3,272 manufacturing establishments located in Detroit, compared with 1,493 in the rest of the three-county area. By 1972, the Detroit figure had declined to 2,398 whereas the suburbs had experienced an increase to 4,728. The trend continued through 1982 when Detroit had 1,618 such establishments compared with 5,763 in the suburbs.

Whereas the number of Detroit manufacturing establishments was approximately halved between 1947 and 1982, employment in those establishments plummeted by nearly 75

Table 2
Age Groups of Black and White Persons Living in Macomb, Oakland, and Wayne Counties: Census 1970 and 1980

(Percentages)

Age group	Black		White	
	1970	1980	1970	1980
City of Detroit				
Under 20	43.8	39.2	30.0	23.2
20-64	50.3	53.3	54.1	57.2
65 or older	5.9	7.5	15.9	19.6
Total	100.0	100.0	100.0	100.0
Rest of three-counties				
Under 20	46.8	39.9	41.4	31.8
20-64	47.8	53.7	52.3	59.3
65 or older	5.4	6.4	6.3	8.9
Total	100.0	100.0	100.0	100.0

SOURCE: Developed from Bureau of the Census, *1980 Census of Population, Characteristics of the Population, Chapter B, General Population, Michigan* (Washington, D.C., 1982), PC80-1-B24, Tables 25 and 45, and a similar document for 1970.

percent (see Table 3). In the remainder of the three-county area, the number of factories nearly quadrupled while employment increased by 80 percent. Suburban manufacturing employment was depressed in 1982 because of the deep recession in Michigan. No doubt the level of manufacturing employment has rebounded since 1982 in the suburbs, although remaining below the 1977 level.

The pattern of establishment and job decline in Detroit in the face of dramatic increases in the suburbs holds in wholesaling industries, retailing, and in service industries. The post-World War II phenomenon was well described by Robert Conot in his *American Odyssey*, first published in 1974.

> In the central city, however, motorists were as much at a loss where to park their automobiles as they had been in the 1920's. Two acres of parking space were needed for each acre of commercial construction—an impossibility in the built-up core of the city where land values were exorbitant. Concurrently, as land was used up voraciously in the construction of single family homes, builders pushed beyond the city limits at Eight-Mile Road. The population center of the city continued to move steadily northwestward.
>
> The downtown business district has prospered because of its central location, and the high population density in the area encompassed by Grand Boulevard. Volume sales had enabled the merchants to reduce their prices, to expand, and to increase their sales even further. But as the population moved outward, "downtown" had less and less meaning as a focal point, and travel to it became more and more inconvenient. New business districts were building up beyond Six-Mile Road. Though their stores were smaller and their merchants charged more, they were more convenient to people living in the better residential areas.
>
> The management of the J. L. Hudson Company, whose downtown skyscraper was one of the largest department stores in the world, decided to follow the people. Just beyond the city limits at Eight-Mile Road and Couzens Drive, at the point where the migrations—northwest from Detroit, south from Pontiac, and north from Dearborn—were intersecting, the Hudson Company began construction of Northland, the first suburban regional shopping center in America. The center's success was immediate and beyond expectation. Oriented horizontally rather than vertically, with unlimited parking, it became the new shopping center for northern and western Detroit.

Table 3
Number and Employment of Manufacturing, Wholesaling, Retailing, and Selected Services Establishments Located in Detroit, and Macomb, Oakland, and Wayne Counties: for Selected Years

Year	Number of establishments		Employment[1]	
	Detroit	Remainder of area	Detroit	Remainder of area
Manufacturing				
1947	3,272	1,493	388,400	167,500
1954	3,453	2,706	296,500	241,700
1958	3,363	3,106	204,400	200,600
1963	3,370	3,653	200,600	293,300
1967	2,947	4,153	209,700	374,700
1972	2,398	4,728	180,400	359,000
1977	1,954	5,551	153,300	395,200
1982	1,518	5,763	105,700	303,300
Wholesaling				
1948	3,606	490	45,079	7,556
1954	3,549	1,065	46,759	14,092
1958	3,806	1,425	45,722	15,913
1963	3,628	2,015	44,615	20,393
1967	3,095	2,549	44,753	32,620
1972	2,392	3,625	33,691	42,079
1977	1,657	4,362	24,772	51,950
1982	1,389	4,861	19,200	58,224
Retailing				
1948	n.a.	n.a.	114,038	48,124
1954	13,253	8,463	108,163	62,786
1958	12,120	10,058	94,500	79,205
1963	10,292	11,287	72,149	93,668
1967	8,433	10,863	75,329	121,466
1972	6,945	12,844	62,811	157,230
1977	5,142	14,275	48,457	193,103
1982	4,125	14,671	37,821	193,981
Selected Services				
1948	n.a.	n.a.	n.a.	n.a.
1954	5,419	2,487	45,295	12,824
1958	5,561	3,520	50,089	17,207
1963	5,435	4,604	48,238	24,223
1967	4,791	5,000	52,8[illegible]	39,453
1972	4,534	7,432	51,670	59,045
1977	3,223	8,821	42,721	85,593
1982	2,676	10,171	34,358	101,253

SOURCE: Bureau of the Census, *1982 Census of Manufactures, Geographic Area Series, Michigan* (Washington, D.C., 1985), MC82-A-23, Table 7; *1982 Census of Wholesale Trade, Geographic Area Series, Michigan* (Washington, D.C., 1984), WC82-A-23, Table 8; *1982 Census of Retail Trade, Geographic Area Series, Michigan* (Washington, D.C., 1984), RC-A-23, Table 6; *1982 Census of Service Industries, Geographic Area Series, Michigan* (Washington, D.C., 1985), SC82-A-23, Table 8, and similar documents for previous years.

1 Figures prior to 1963 exclude manufacturing employees in central administrative offices and auxiliary establishments. For the total tri-county area, those employees totaled 63,500 in 1958 and 52,200 in 1954. 1947 total is not available.

2 1982 data based on 1977 definitions.

Note: Data pertains to establishments with payroll.

> Industry, also, lacked land for expansion. Although some plants had been built between 1942 and 1945, most of the city's factories had been erected before 1929. They were jammed into industrial corridors along railroad tracks and on the riverfront. Typically three to five stories high, and predating the age of truck transportation,

they had been built for compactness. When the time came for expansion, there was no room to expand them. New industrial plants, freed from the limitations of locale by the grids of highways and electric power lines constructed in the 1930's, were being located in suburban areas, where raw land was cheap. Like residential and commercial construction, they were oriented horizontally, spreading one-story high over scores of acres, and accommodating their workers with as many acres of parking. (Frequently a manufacturer recouped the entire cost of a new plant by buying more land than he needed, holding the excess acreage for a few years, then selling it at a large profit.) Far more efficient than the older factories, the new one-story plants generated pressure on industries to abandon their obsolescent facilities.[2]

Imports also were a factor in the late 1950s.

Between 1955 and 1960 imports of foreign cars increased from 57,000 to 445,000 even while exports of American cars were dropping by more than 100,000. This difference of a half million cars translated itself into the loss of 50,000 jobs in the automobile industry, and multiplied as it spread over ancillary industries. The effect on the independent auto manufacturers and on the city of Detroit was devastating. In addition to Packard, Hudson closed down, and with Hudson went 35,000 jobs. As suppliers went out of business or moved from the city, the East Side alone lost 71,000 jobs in the 1950's and early 1960's. With the plants went the taxes and the revenues they had produced—the Packard plant was sold for 10 percent of its assessed valuation.[3]

Then, as now, automation affected labor demand.

In the automobile industry, automation was enabling 641,000 workers to produce almost a half million more cars and trucks in 1961 than 735,000 had produced in 1949. Employment for unskilled and lower-skilled workers in the Detroit metropolitan area dropped more than 13 percent between 1950 and 1960.[4]

Since 1977, the single-most important factor affecting the Detroit economy has been the restructuring of Chrysler Corporation which resulted in the closing of two assembly plants in the cities of Detroit and Hamtramck. Several smaller Chrysler plants and independent supplier plants were affected by the loss of markets provided by those two assembly plants. In the restructuring that still is taking place in the automotive industry, Detroit has paid a heavy penalty for being the pioneering city in automotive mass production, therefore having the most antiquated, least efficient production facilities in the industry, generally speaking.

Congestion, crime, racism, and the lure of greener pastures created pressure on Detroiters who could afford to leave. Extensive freeways provided the avenues of escape and return commute for those still with jobs in the city. Cash flow was provided by an active real estate market, fueled by urban renewal, clearance for the freeways, and lucrative jobs that were moving to the suburbs.

The result of the shifting retail base is illustrated most dramatically in a recent report from the Michigan Department of Treasury regarding sales tax collections. In 1984, according to the estimate, sales tax collections from Detroit's retailers averaged $99.59 per woman, man, and child living in the city. In Troy the figure was $526.07; in Southfield, $582.80; in Royal Oak, $242.47; and in Dearborn, $432.26.[5]

EMPLOYMENT AND UNEMPLOYMENT

The data in Table 3 pertain only to selected economic sectors, not to the total economy. Table 4 has been prepared to show the reshaping taking place in the economy as a whole. There it will be seen that the brunt of the job loss has been borne in manufacturing and wholesale and retail trade and outside of the central business district. Table 5, which shows income tax returns processed by the city through calendar year 1985, indicates that Detroit's job base continued to decline through 1984 in the face of the national and state recovery which started in 1982.

Ironically, the late 1960s, the most turbulent period in the city's history, were also marked by an economic revival of

Table 4
Detroit-Suburban Residence of Persons Working in Detroit, by Industry Division: Census 1970 and 1980

	Living in Detroit		Living in suburbs[1]		Working in Detroit[1]	
Industry group	**1970**	**1980**	**1970**	**1980**	**1970**	**1980**
Construction	8,505	4,231	9,526	7,086	18,031	11,317
Manufacturing	90,283	44,360	82,939	69,728	173,222	114,088
Transportation, communications	21,185	18,684	18,085	18,674	39,270	37,358
Wholesale, retail	62,221	31,273	41,300	31,315	103,521	62,588
Finance, insurance, real estate	18,821	12,818	14,730	14,531	33,551	27,360
Business, repair services	11,569	8,314	8,562	8,698	20,131	17,012
Personal services	15,387	7,272	3,765	2,325	19,152	9,597
Professional and related services	57,393	62,756	26,814	41,274	84,207	104,030
Public administration	22,339	21,757	6,132	8,040	28,471	29,797
All other industries	3,441	2,478	1,990	1,657	5,431	4,135
Armed forces at work	214	144	252	396	466	540
Total	311,358	214,087	214,095	203,735	525,453	417,282
Revised total	355,000[2]	246,000[2]	236,000[2]	219,000[2]	591,000[2]	465,000[2]

SOURCE: Bureau of the Census, *1980 Census of Population, Journey to Work: Characteristics of Workers in Metropolitan Areas* (Washington, D.C., 1984), PC80-2-6D, Table 2; *1980 Census of Population, Census Tracts, Detroit, Michigan* (Washington, D.C., 1983), PHC80-2-140, Table P-9; and similar documents for 1970.

1. Includes St. Clair, Livingston, and Lapeer counties in 1980. Fewer than 4,000 people from these counties worked in Detroit.

2. Figures have been adjusted by the City of Detroit, Planning Department, to include persons for whom place of work was not reported. For both 1970 and 1980 only residents of the tri-county area are included in the figures. Persons who had a job but were not at work when the census was taken are not included.

Table 5
Income Tax Returns Processed: Calendar Years 1963 through 1985

Processing year ended 12/31	Tax accounting period[1]	Individual		Corporations	Partnerships and proprietorships	Total
		Residents	Nonresidents			
1963	1962[2]	440,738	199,488	8,971	3,643	652,840
1964	1963	461,949	219,124	12,004	5,201	698,278
1965	1964	470,407	232,955	12,524	5,552	721,438
1966	1965	479,410	233,076	11,672	4,885	729,043
1967	1966	452,163	225,743	12,044	5,094	695,044
1968	1967	453,478	225,381	11,772	4,552	695,183
1969	1968	478,105	234,421	11,823	4,300	728,649
1970	1969	488,095	243,682	11,684	4,258	747,719
1971	1970	468,378	234,892	11,605	3,922	718,797
1972	1971	450,831	244,896	11,522	3,749	710,998
1973	1972	443,076	247,074	11,503	3,560	705,213
1974	1973	440,955	253,462	11,346	3,343	709,106
1975	1974	426,951	244,355	11,173	3,046	685,525
1976	1975	383,800	232,252	10,644	2,930	629,626
1977	1976	379,639	236,658	9,617	2,515	628,429
1978	1977	368,214	239,400	9,477	2,266	619,357
1979	1978	369,697	234,454	8,896	2,041	615,088
1980	1979	360,847	226,756	8,941	1,982	598,526
1981	1980	340,025	216,154	8,946	1,866	566,991
1982	1981	294,328	203,382	9,071	1,841	508,622
1983	1982	293,424	204,283	8,574	1,755	508,036
1984	1983	278,869	193,790	8,793	1,733	483,185
1985	1984	278,147	192,738	8,031	1,694	480,610
1986	1985	283,837	193,781	8,146	1,577	487,341

SOURCE: City of Detroit, Budget Department, special release.
1. The period for which an annual return was due in the processing year.
2. Effective date of the Income Tax Ordinance was 7-1-62; first accounting period was 7-1-62 through 12-31-62.

sorts. Although the number of employers had continued to shrink, the evidence in Tables 3 and 5 suggests increased job rolls among those employers who stayed. This was a period of labor shortage engendered by high-level domestic demand for goods and by the military buildup associated with the war in Southeast Asia. In 1966, Detroit's manufacturers were actually recruiting raw labor from the South.

The unemployment rate in the city stood at about 5 percent in 1967; it was 4 percent in the rest of the area, according to a special tabulation by the Bureau of Labor Statistics.[6] For 1969, the next period for which data are available, the rate was 5.6 percent, Detroit, and 3.0 percent, suburbs. During the first two years after the 1967 rioting, Detroit lost 25,000 jobs while the suburbs were gaining 50,000. While unemployment in the city climbed, there were serious labor shortages in the suburbs.

Through the rest of the decade, Detroit's unemployment level fluctuated between 9 and 18 percent while the suburban rate lay between 5 and 8 percent. In the recession of 1980, Detroit registered 23.3 percent, officially, while the level in the rest of the six-county area was 10 percent. In the shakeout year of 1982, the rate here was over 25 percent, about double the 13 percent elsewhere in Southeast Michigan.

With the exception of 1977 and 1978, the number of Detroiters with jobs declined continuously during the 1970s. In fact, the decline continued through 1983. There has been little if any improvement in job prospects for Detroiters since 1983, but at least the free fall has been arrested. During the five-year 1978-1983 period, the job loss among city residents approximated 30 percent, about the same figure as that for the 11 years previous to 1978.

When the final tabulations for 1987 are in, they will show a decline of about 325,000, or half, in the number of Detroit residents holding jobs since the 1967 rioting. Meanwhile the number of jobholders in the rest of Wayne, Oakland, Macomb, St. Clair, Livingston, and Lapeer counties will have risen by roughly 550,000, or between 50 percent and 60 percent, as a result of migration of jobs and people and of job growth in the suburbs.

Among Detroiters, the unemployment rate will have quadrupled to about 20 percent. Among suburbanites, it will have increased by half to 6 percent. The rate of unemployment in the city has remained in the 20-25 percent range since 1982, notwithstanding exceptional job growth for the nation. Meanwhile, job growth in the suburbs has reduced the rate to a level below the national average and half what it was during the bleak days of 1981, 1982, and 1983. Casual empiricism by this author indicates that there are labor shortages in some of the northern suburbs, especially for people to fill entry-level jobs, such as service workers in fast food restaurants. In 1986, the official unemployment rate among black Detroit teenagers was 57 percent.

The following comments put the numbers in a slightly different perspective. In 1986, 63 percent of the suburban population 16 years old or older was gainfully employed. In Detroit, the employment rate was 41 percent. The employment rate among black Detroit teenagers was 19 percent compared with 55 percent among teenagers in the suburbs.

Table 6
Labor Force Participation Rate for Persons Living in the Detroit Metropolitan Statistical Area: 1981–1986

	Detroit						Metropolitan Statistical Area					
	1981	1982	1983	1984	1985	1986	1981	1982	1983	1984	1985	1986[1]
Civilian Noninstitutional Population, 16 years Old and Older (000)												
Black males	219	230	207	227	232	238	247	264	256	267	258	273
females	278	262	20	287	288	309	317	308	314	329	329	353
White males	157	149	139	138	126	104	1,224	1,222	1,205	1,217	1,236	1,262
females	162	170	154	144	140	127	1,348	1,324	1,316	1,323	1,317	1,350
Total males	384	387	354	375	366	350	1,491	1,507	1,485	1,506	1,514	1,568
females	447	439	413	438	433	440	1,691	1,654	1,654	1,676	1,667	1,730
Total	831	826	767	813	799	790	3,182	3,161	3,140	3,184	3,181	3,298
Civilian Labor Force (000)												
Black males	143	154	134	148	145	147	165	176	168	178	163	172
females	128	124	118	132	137	148	148	147	155	159	164	173
White males	108	100	89	87	84	65	991	965	935	739	976	994
females	72	81	69	55	59	60	678	689	697	707	722	731
Total males	258	260	229	239	232	215	1,173	1,159	1,120	1,129	1,152	1,188
females	202	206	191	190	198	200	839	846	864	879	896	919
Total	460	466	419	429	430	416	2,011	2,004	1,984	2,008	2,048	2,106
Labor Force Participation Rate (%)												
Black males	65.5	66.8	64.8	65.3	62.3	61.7	66.8	66.7	65.4	66.8	63.3	62.7
females	46.0	47.2	47.1	45.9	47.6	48.0	46.8	47.6	49.5	48.5	49.7	49.1
White males	68.9	66.9	64.0	63.2	66.9	62.3	81.0	79.0	77.6	77.0	79.0	78.7
females	44.6	47.4	44.8	38.5	41.9	39.3	50.3	52.0	53.0	53.4	54.8	54.2
Total males	67.1	67.2	64.6	63.9	63.4	61.6	78.6	76.9	75.4	75.0	76.1	75.7
females	45.3	47.0	46.2	43.2	45.7	45.5	49.6	51.1	52.2	52.4	53.8	53.1
Total	55.4	56.4	54.7	52.8	53.8	52.6	63.2	63.4	63.2	63.1	64.4	63.9

SOURCE: Bureau of Labor Statistics, *Geographic Profile of Employment and Unemployment* (Washington, D.C.: annual), and special release.
NOTE: The Detroit Standard Metropolitan Statistical Area consists of Lapeer, Livingston, Macomb, Oakland, St. Clair, and Wayne counties. Data shown are annual averages.
1. Monroe County added in 1986.

Table 7
Employment and Unemployment, Persons 16 Years Old and Older Living in the Detroit Metropolitan Statistical Area: 1981–1986

	Detroit						Metropolitan Statistical Area					
	1981	1982	1983	1984	1985	1986	1981	1982	1983	1984	1985	1986[1]
Employment (000)												
Black males	106	98	93	101	101	110	122	113	117	127	117	132
females	97	86	83	94	94	112	111	102	107	116	116	132
White males	92	80	72	78	71	54	897	840	815	871	917	928
females	63	71	60	51	53	44	601	600	618	648	670	683
Total males	203	183	169	182	175	168	1,032	968	945	1,010	1,045	1,081
females	164	158	147	148	149	158	722	711	736	775	796	829
Total	367	341	316	329	324	326	1,754	1,679	1,681	1,785	1,841	1,910
Unemployment (000)												
Black males	38	56	41	47	43	36	43	63	51	51	47	40
females	31	38	35	38	43	36	37	45	49	44	48	41
White males	16	20	16	10	13	11	94	125	119	66	60	66
females	8	10	9	4	6	6	77	89	79	59	52	49
Total males	55	77	60	58	57	48	141	191	175	119	107	107
females	39	48	44	42	49	43	117	135	128	104	100	90
Total	93	125	104	100	106	90	258	325	303	223	207	196
Unemployment (%)												
Black males	26.2	36.1	30.6	31.7	29.9	24.8	26.3	36.0	30.4	28.8	28.6	23.1
females	24.0	30.7	29.8	28.4	31.6	24.6	24.9	30.8	31.2	27.4	29.2	23.6
White males	14.5	19.7	18.4	11.0	15.9	16.7	9.5	12.9	12.8	7.0	6.1	6.6
females	10.7	12.0	12.8	7.4	9.5	12.3	11.4	12.9	11.3	8.3	6.7	6.6
Total males	21.3	29.8	26.1	24.1	24.5	22.1	12.0	16.4	15.6	10.6	9.3	9.0
females	19.1	23.3	23.2	22.1	24.7	21.3	13.9	15.9	14.8	11.8	11.2	9.7
Total	20.3	26.9	24.7	23.2	24.6	21.7	12.8	16.2	15.3	11.1	10.1	9.3

SOURCE: Bureau of Labor Statistics, *Geographic Profile of Employment and Unemployment* (Washington, D.C.: annual), and special release.
NOTE: The Detroit Standard Metropolitan Statistical Area consists of Lapeer, Livingston, Macomb, Oakland, St. Clair, and Wayne counties. Data shown are annual averages.
1. Monroe County added in 1986.

Table 8
Trends in Commuting Patterns in the Detroit Metropolitan Area: 1960 to 1980

Live in	Work in	1960	1970	1980
		(% except where 000 indicated)		
Total metropolitan area workers (000)		1,301	1,509	1,547
Detroit	Detroit	38	23	16
Detroit	Suburbs	8	12	8
Suburbs	Detroit	18	16	14
Suburbs	Suburbs	36	49	62
Total		100	100	100
Detroit	Metropolitan area	46	35	24
Suburbs	Metropolitan area	54	65	76
Total		100	100	100
Metropolitan area	Detroit	56	39	30
Metropolitan area	Suburbs	44	61	70
Total		100	100	100
Total Detroit residential workers (000)		597	533	366
Detroit	Detroit	82	67	67
Detroit	Suburbs	18	33	33
Total		100	100	100
Total suburban residential workers (000)		704	976	1,180
Suburbs	Detroit	34	24	19
Suburbs	Suburbs	66	76	81
Total		100	100	100
Total workers in Detroit (000)		729	591	465
Detroit	Detroit	67	60	53
Suburbs	Detroit	33	40	47
Total		100	100	100
Total workers in suburbs (000)		572	918	1,082
Detroit	Suburbs	19	19	11
Suburbs	Suburbs	81	81	89
Total		100	100	100

SOURCE: City of Detroit, tabulations prepared from the 1960 Census Tract Report, 1970, Journey to Work Subject Report, 1980, Urban Transportation Planning Package (UTPP).
NOTE: Metropolitan Area defined as Wayne, Oakland, and Macomb counties for all three years presented. 1960 and 1970 data allocated for persons with place of work not reported.

Small wonder that Detroit youth are frustrated and bitter.

Tables 6 and 7 have been prepared to show the changing racial mix of Detroit's labor force since 1981. Essentially, they reveal a continuation of the white flight that characterized the decade of the 1970s and the relatively stable level of employment and unemployment among blacks in the city.

Table 8 is intended to shed light on changes in commuting patterns between the city and its suburbs. With the rapidly shrinking job base in the city, Detroiters as well as suburbanites are looking more and more to the suburbs for econornic opportunity. In a recent analysis, Patricia C. Becker made the following observations:

> During the 1960s, the jobs of many Detroit residents moved to the suburbs. Workers did not immediately follow their jobs out of the city; many commuted to the suburbs to work instead. By the decade of the 1970s, however, many workers who lived in Detroit were moving to the suburbs, accounting for the large drop in the number of resident workers between 1970 and 1980.
>
> The jobs remaining in Detroit, and held increasingly by suburban residents, are those located downtown (the Central Business District or CBD) and in the Woodward Corridor. They are concentrated in banking, communication, utilities, newspapers, professional services (such as the University, hospitals and law), and government.
>
> The jobs that have left the city for the suburbs, or disappeared altogether, are those in the manufacturing industries. High unemployment in 1980 was concentrated in these industries, making the patterns appear even sharper than in a better year of the economic cycle. Meanwhile, the great number of retail and service jobs that are tied to where people live (such as elementary and secondary education, doctors and dentists, cleaners and shoemakers) are increasingly located in the suburbs as the population grows in those areas.[7]

In reviewing these data on employment bear in mind that they are based on surveys of people who live in Detroit or the suburbs. People who work in Detroit may live in the suburbs and vice versa. Consequently, the figures in Tables 5 and 7 do not represent the number of jobs located in the particular areas. Those in Tables 3 and 4 do. The Census of Manufactures, Census of Retail Trade, and the other so-called economic censuses are based on responses from employers, not employees like those in the subsequent tables.

Also the reader is cautioned that Tables 6 and 7 are based on relatively small samples of households. The households were selected so as to represent the areas overall; however, sampling error is sizeable and relatively greater the smaller the number of people in the overall population. Accordingly, the numbers in these tables should be interpreted as suggesting trends and not as definitive in and of themselves.

The greater area defined in Table 3 is Wayne, Oakland, and Macomb counties. Table 5 pertains to the city of Detroit. Tables 4, 6, and 7 are based on definitions that include Lapeer, Livingston, and St. Clair counties as well as the tri-county area. Table 8 also pertains to the three-county area. These data, like those in Table 4, pertain to the month of April for the years indicated. On the other hand, Tables 3, 5, 6, and 7 are based on annual averages.

OCCUPATIONS

The dwindling number of manufacturing establishments in this city is reflected in the declining number of people employed in the occupational category known as operative. This is the category which includes most of the high-wage, low-skill jobs that drew southerners to Detroit during the 1920s, 1940s, 1950s, and 1960s. Between 1970 and 1980, the number of Detroiters employed as operatives declined by over 40 percent. Whereas in 1970 over 30 percent of this city's employed black and white men and women were so classified, by 1980 that proportion had declined to less than 25 percent.

Meanwhile, the number of suburbanites who worked as operatives increased somewhat, although their proportion of all employed suburbanites in this area declined from 21 percent to 17 percent. More recent data from the Bureau of Labor Statistics suggests that the number of operatives, and the proportion of the labor force so employed, has continued to decline in Detroit and is less in the suburbs too than it was in 1980.

Blacks were especially heavily dependent on these jobs. In both Detroit and its suburbs over half of black males worked

as operatives in 1970 compared with less than a third among white males. In 1980 about 40 percent of black men were operatives compared with around a quarter for white males.

For blacks, some employment opportunities materialized in the service workers category, other than domestics. This classification is heavily weighted by occupations such as nursing aide, cook, barber, and cleaning service occupations that pay poorly. There were sizeable increases in the number of suburbanites so employed. In one of the poorest paying occupational groupings, domestics, the number so employed is dwindling among women and men, black and white, in both the city and in suburbs.

Both the number and proportion of employed black men and women moving into the ranks of professional and managerial-type occupations is increasing in the city and its suburbs. This occupational category is heavily weighted in favor of the top-paying jobs. In both 1970 and 1980, the proportion of black men classified in the top category was well below the proportions for black women and white women, although there was some improvement between 1970 and 1980. In the suburbs the ranks of professionals and managers are heavily dominated by white males, although black males as well as women of both races made more rapid gains between 1970 and 1980.

Detroiters, particularly white males, are more heavily dependent than are suburbanites on local government as a source of jobs, and that dependence has grown. Many Detroiters employed by the city likely would leave if they did not have to meet residence requirements, thus reducing that ratio. Among white women the proportion employed in local government is greater in the suburbs.

Minority business also has been a disappointment as a source of jobs. According to the most recent survey, there were 6,798 black-owned businesses within the city of which 812 had employees other than the owners themselves. Those 812 employed fewer than 3,000 people.[8]

A significant proportion of Detroit's work force is trained to take orders on an assembly line and poorly qualified for other jobs. A high proportion of Detroit's young adults have little or no work experience at all, and therefore no first hand knowledge of even the rudimentary rules and customs of the world of work. Few Detroiters have the attitudes and skills required to start businesses.

POVERTY

At the time of the 1980 Census of Population, 27 percent of black Detroiters lived in households below the poverty level, compared with 22 percent ten years earlier. Among whites in this city the percentage increased from 9 to 13. Among blacks in the suburbs the percentage was stable at 20. Among white people it increased from a level of 4 percent to 5 percent. These figures are based on 1969 and 1979 incomes, both relatively prosperous years compared with those that followed. More recent compilations, based on a small sample of households, show a sharp increase in poverty in the city (Table 9).

Accompanying the poverty phenomenon is a sharp deterioration in the quality of the income distribution among black Detroit families. The gap between haves and have-nots is increasing, not just between the city and its suburbs but also among blacks within the city itself.

Table 9
Median Income and Percent in Poverty in the United States, Metropolitan Detroit Area, and City of Detroit

Category/Year	United States	Metropolitan area	City of Detroit
	Median Income		
Families			
1975	$13,719	$16,692	$13,200
1976	14,958	18,741	15,123
1977	16,009	20,720	17,991
1978	17,640	22,692	17,981
1979	19,661	24,442	17,786
1980	21,023	26,086	15,984
1981	22,388	28,138	15,267
1982	23,433	26,642	17,431
1983	24,580	26,919	15,308
1984	26,433	30,963	13,906
1985	27,735	32,367	18,121
Households			
1976	$12,686	$16,618	$11,639
1977	13,572	17,785	12,726
1978	15,064	19,710	15,623
1979	16,533	21,366	13,170
1980	17,710	22,182	12,676
1981	19,074	24,482	11,929
1982	20,171	23,280	13,972
1983	20,885	22,541	13,521
1984	22,415	25,363	11,391
1985	23,618	26,881	15,093
	Percentage below Poverty Level		
Persons			
1976	11.8	9.4	20.4
1977	11.6	7.8	14.7
1978	11.4	6.6	12.1
1979	11.6	8.9	18.8
1980	13.0	13.1	28.6
1981	14.0	12.8	30.6
1982	15.0	18.1	38.1
1983	15.2	16.6	36.4
1984	14.4	17.8	42.8
Families			
1976	9.4	7.8	17.7
1977	9.3	6.1	11.8
1978	9.1	5.3	9.1
1979	9.1	7.0	15.6
1980	10.3	11.1	26.2
1981	11.2	10.6	27.9
1982	12.2	14.5	32.1
1983	12.3	14.5	34.8
1984	11.6	15.1	39.2

SOURCE: Planning Department, City of Detroit, special release.
NOTE: There is sampling error associated with the income and poverty numbers. In the poverty data, for example, the standard error for the city is 4.3 percent. This means that we can be only 68 percent confident that the true poverty rate (which is unknown) lay between 32.1 percent and 40.7 percent in 1983. We can be 95 percent confident that it lay between 27.8 percent and 45.0 percent. The standard error for the entire metropolitan area for that year is far less, only 1.8 percent, because the sample is larger. That for the U.S. is smaller still. The standard error for mean income for Detroit households was $1,347 in 1985. That for the metropolitan area was $1,150, and for the country, $128.

FISCAL IMPLICATIONS

When millage for debt service is included, Detroit has the highest city property tax rate in the state of Michigan. Including income taxes, utility taxes, and county and school

district millages along with the city income tax, Detroit bears the heaviest tax burden of any city in this state. The property tax base, despite some improvement since 1984, still is below the 1974 peak. Those figures have not been adjusted for inflation.

With operating millages at their maximum of 23, the city has had to rely more heavily on nonproperty taxes and on other sources to meet its needs. In 1981 the personal income tax rates were raised to 3 percent of taxable income for residents and 1.5 percent for nonresidents. This source too has eroded by the departure of businesses and residents. These days, over a quarter of all income taxes collected by the city are in the form of nonresident personal income taxes.

Further, in recent years Detroit has relied less and less on the federal government because of Washington's parsimony with state and local units of government and with social welfare programs in general.

Recently, three important studies have been released which offer comparisons of Detroit and other large U.S. cities. In one, Detroit ranks fourth from the bottom among cities ranked according to real total income growth between 1970 and 1980. We also are fourth from the bottom in the percentage change in residents employed locally.[9] In another study, the 56 cities with populations over 250,000 are ranked on the basis of need as measured by poverty, dollar change in real per capita income between 1969 and 1979, percentage change in real per capita income between 1969 and 1979, and unemployment rate in 1980. In 1970, Detroit did not even make the 10 highest need list.[10] Detroit ranked behind Newark in being neediest in 1980. Finally, in a staff working paper the Advisory Commission on Intergovernmental Relations released its study of tax burdens among cities that are the largest in each state. For a married couple with two dependents, earning $25,000, Detroit topped the other 49 cities and the District of Columbia. At the $50,000 level of income, the same family ranked second, behind those in New York City.[11]

One of the conclusions in The Joint Economic Committee's report on urban America is that:

> The President's version of the New Federalism hit many large cities and their poorer residents very hard. Reduced funding, and less targeting to cities, combine to paint a bleak future for the ability of cities to provide adequate levels of human services. If central cities continue to suffer from uneven economies and population shifts, they will also be unable to increase their own revenues to make up for federal reductions.[12]

CONCLUDING REMARKS

Southeast Michigan is the quintessential automotive culture. We have the bulk of automotive research and development in tech centers located here. According to a recent issue of *Occupational Outlook Quarterly* (Winter 1986), published by the Bureau of Labor Statistics, 13.5 percent of the nation's mechanical engineers, 17.7 percent of the nation's tool and die makers, and 11.6 percent of the nation's metal and plastic-working machine operators work in this state. We are the nation's leader in those categories of skills. In other words, we provide the markets, the skills, the infrastructure, and the network for this increasingly high technology, integrated through the intricacies of the just-in-time regimen. Our reputation is international.

> The fastest growing high-tech corridor in the United States today is no longer Silicon Valley south of San Francisco, nor Route 128 around Boston, but a 40-mile strip in Michigan stretching west from Detroit to the leafy campus town of Ann Arbor. Locals call it Automation Alley, because two-thirds of all the robots and clever manufacturing tools made in America come from little firms along its length. How it was born again contains lessons for old industrial areas everywhere.
>
> Five years ago, the region was written off as "Rust Bowl America." Today, spurred by the modernisation of its car industry (with its nine graduate engineering schools, 100 R & D centres, 2,000 machining shops and $18 billion a year of local business in precision parts alone), southeast Michigan boast the world's largest concentration of engineering manufacturers as well as the world's biggest cluster of car factories.[13]

Because of our attractions as a place to do business, Michigan typically gets an outsize proportion of the new investment dollars spent in this country. In the most recent tabulation, that for 1985, we trailed only California in new manufacturing investment. Investment data are compiled by the Bureau of the Census.

Most of the new investment in the state takes place in the suburbs around Detroit, a tribute to its importance as the automotive center, but not very helpful in creating jobs in the city itself. Most of the building that takes place in Motown is renovation: the recycling of multilevel factories and warehouses, outmoded in today's manufacturing industries.

Detroit is a city of extremes: extreme growth, extreme concentration of the automotive industry, extreme outflow of income and wealth to finance growth in the suburbs, extreme racial polarization, and extreme deprivation. We also are vastly underrated these days. Detroit has vast empty spaces, a huge inventory of well-built, well-styled structures, a well-designed system of highway, rail, air, and water transportation along with underutilized and abandoned right-of-way that is available for expanded mass transit, and enormous energy. Detroit is outstanding for it cultural activities. With the Tigers, Red Wings, Formula 1 Grand Prix, boat races, Montreux-Detroit Jazz Festival, Detroit Symphony Orchestra, ethnic festivals, and so forth, Detroit is an entertainment mecca. The downtown streets are jammed with people having a good time.

One problem of Detroit is that the downtown lacks a core of major corporate headquarters that would improve its attraction as a place to locate a new, large hotel. Detroit's financial center tends to service the local market and not national and international customers on the scale of New York, London, Tokyo, Miami, Chicago, and Los Angeles. The other major downtown industries—government and legal services—also service primarily local needs. The result of insufficient demand is few full-line, first-class hotels to supplement the expansion taking place at Cobo Hall.

The issue of casino gambling will not go away because it seems like an easy fix, a means of keeping the momentum. As generally envisaged, however, gaming would be isolated from the rest of the city by excluding it from all but the east end of Belle Isle. Thus, besides depriving Detroiters of their favorite summer playgound, this locale would do downtown a disservice by draining business from where it is most needed. It would be better to enrich the park by increasing local usage, such as summer olympics each year for bored Detroit youth. Entertainment casinos, Las Vegas style, might be

appropriate in an integrated downtown economy if there were no other means of complimenting what is there already or planned for the future. Casinos might lay the foundation for the full development of downtown as a convention/entertainment center. With proper safeguards, casinos could provide jobs enough to make significant inroads on unemployment.

The job-creating potential for cable television has largely been ignored. At the very least, this medium, new to the city, can provide an outlet for the artistic bent of Detroit youth, as well as a much needed link-up among the schools.

Detroit will enter the twenty-first century as one of the top dozen cities in size of population in the country. We are part of the nation's sixth largest consumer market.[14] We sit on the doorstep of the rapidly expanding Ontario economy. Opportunity for small merchants, entertainers, consultants, tinkerers, and a wide variety of other specialties is staggering. But more can be accomplished. Perhaps General Motors can be persuaded to expand its minority vendor program in the city as part of its move to outsource more of its parts needs. Perhaps the means can be found to develop a plastics research park in the vicinity of the University of Detroit, as a complement to its own Polymer Technologies, Incorporated. Polymer Technologies has been in the business of contract research since 1968. In the Cass Corridor, the Metropolitan Center for High Technology in conjunction with Wayne State University could be the focus of a research park.

Notwithstanding the opportunity and prospects for job growth in some sectors, the near term outlook is for futher shrinkage in both job base and population. Announced plant closings with others sure to follow simply are eliminating jobs at a faster pace than the expanding sectors and areas are adding them. When will the crossover occur? When will job increments in expansive sectors finally outnumber job losses? When will we overcome our excessive dependence on external forces and develop attitudes of confidence, flexibility, venturesomeness, and control over our own destiny? Perhaps not until we have persuaded youth of the economic opportunity within the city, providing they can redirect their energies away from crime, school dropout, teenage pregnancy, and substance abuse that makes our city so conspicuous. Safer streets and a more settled social base would provide merchants the stability they need in order to rebuild the local retail and service sectors that are so underrepresented these days.

It seems worth reprinting Mayor Coleman A. Young's vision, ushering in the decade of the 1980s.

> I know that Detroit is going to be a much different place by the year 2000—if not sooner. Most significantly, downtown Detroit will have become a complete community, a real neighborhood, where people live as well as work and play. Downtown housing will have expanded, and the streets will be alive with 24-hour acitivity.
>
> Transportation will be vastly improved. The downtown People Mover, now only a short time from reality, will create a new freedom of movement, unclogging traffic and reducing the demand for centralized parking. I'm certain that a rapid transit system will also be a reality by the year 2000, linking the suburbs and the communities on all sides to Detroit.
>
> Our neighborhoods will have reached a new stability, with improved housing and revitalized business districts. The exodus from the city will have been reversed. I also expect that Detroit will expand and broaden its economic base, reducing its dependence on the automotive industry by developing service industries and widening international trade.
>
> I hope to see Detroit prosper, of course, but more than that I hope that the new spirit I see among our people—a spirit of confidence, cooperation and pride—will continue to grow and spread. For myself, I'd like to find a quiet place by the water about an hour from Detroit.[15]

CITATIONS

1. Morton D. Winsberg, "Geographical Polarization of Whites and Minorities in Large U.S. Cities: 1960-1980, *Population Today* 14, no. 3 (March 1986): 6-7.
2. Robert Conot, *American Odyssey* (New York: Morrow, 1974; Detroit: Wayne State University Press, 1985), 401.
3. Conot, 430.
4. Conot, 454.
5. Michigan Department of Treasury, *The Michigan Sales Tax: An Analysis* (Lansing: 1986), 14.
6. Paul O. Flaim, "Jobless Trends in 20 Large Metropolitan Areas," *Monthly Labor Review* 91, no. 5 (May 1968): 19.
7. "Commuting in Metropolitan Detroit," *Census Discussion Papers: Metro Detroit in the 80's*, no. 7 (Detroit: Wayne State University, Center for Urban Studies, 1986): 3-4.
8. Bureau of the Census, *1982 Survey of Minority-Owned Business Enterprises, Black*, MB82-1 (Washington, D.C.: 1984): 78.
9. Advisory Commission on Intergovernmental Relations, *Fiscal Disparities: Central Cities and Suburbs, 1981* (Washington, D.C.: U.S. Government Printing Office, 1984): 34.
10. The National Urban Policy Advisory Committee to the Subcommittee on Investment, Jobs, and Prices of the Joint Committee of the Congress, Urban America 1984, *A Report Card* (Washington, D.C.: 1984): 4.
11. Advisory Commission on Intergovernmental Relations, *Tax Burdens for Families Residing in the Largest City in Each State, 1982*, Staff Working Paper 3R (Washington, D.C.: 1984): 11.
12. The National Urban Policy Advisory Committee, 45.
13. *The Economist*, 11 April 1987, p. 15.
14. Laurence S. Rosen, *Southeastern Michigan: The Nation's Sixth Largest Consumer Market* (Detroit: University of Detroit, Kellstadt Consumer Research Center, 1985), mimeo.
15. *The Detroit News Magazine*, 2 December 1979, p. 9.

Brief

There were 12,270 black-owned enterprises in Michigan in 1982, about 3.6 percent of the U.S. total of 339,239. In 1977, the previous survey year for minority-owned businesses in this country, Michigan had 3.7 percent or 8,511 of the U.S. total of 231,203.

The Bureau of the Census conducts economic censuses every five years. The *Survey of Minority-Owned Business Enterprises* provides data on businesses owned by blacks, persons of Spanish or Latin American ancestry, and persons of American Indian, Asian, or other minority origin or descent.

Data for the state, nation, and Michigan cities and counties having 100 or more black-owned firms in 1977 and 250 or more such enterprises in 1982 are shown in Table 1. Because of the severity of the 1982 recession in this state, the results for minority-owned businesses in this state are depressed. For example, in the United States in both 1977 and 1982, average gross receipts among black-owned firms stood at about $37,000. For 1982 the Michigan average was

Table 1
Black-Owned Business Enterprises in Michigan and the United States: 1977 and 1982

Area	Year	With paid employees				Without paid employees		Total	
		Number of firms	Employees	Payroll[2] ($000)	Gross receipts ($000)	Number of firms	Gross receipts ($000)	Number of firms	Gross receipts ($000)
CITIES									
Ann Arbor[3]	1977	13	39	169	775	111	761	124	1,536
Benton Harbor[3]	1977	15	72	322	1,850	86	1,080	101	2,930
Detroit	1977	1,100	4,126	29,950	196,965	4,083	61,520	5,813	258,485
	1982	812	2,877	27,525	194,028	5,986	78,377	6,798	272,405
Flint	1977	83	271	1,662	9,313	356	3,239	439	12,552
	1982	67	218	1,998	20,054	567	6,427	634	26,481
Grand Rapids	1977	38	101	552	4,652	170	2,039	208	5,691
	1982	30	84	620	4,515	222	2,904	252	7,419
Inkster[3]	1977	30	137	1,186	6,998	115	2,032	145	9,030
Kalamazoo[3]	1977	15	55	331	1,579	91	964	106	2,543
Lansing	1977	19	42	285	1,266	97	576	116	1,842
	1982	17	25	159	902	242	1,579	259	2,481
Pontiac[3]	1977	28	65	404	2,518	118	1,865	146	4,383
Saginaw[3]	1977	27	67	336	3,256	101	1,489	128	4,745
Southfield[4]	1982	43	148	2,444	9,934	307	6,609	350	16,543
COUNTIES									
Berrien[3]	1977	25	98	541	2,994	151	1,861	176	4,855
Calhoun[3]	1977	23	69	430	1,794	102	764	125	2,558
Genesee	1977	90	296	1,814	10,304	407	3,628	497	13,932
	1982	77	247	2,331	21,940	703	7,564	780	29,504
Ingham	1977	20	60	349	2,334	110	1,139	130	3,743
	1982	23	57	450	3,640	310	2,346	333	5,986
Kalamazoo[3]	1977	19	62	390	1,839	117	1,131	136	2,970
Kent	1977	42	106	580	3,819	206	2,371	248	6,190
	1982	39	D	D	D	339	D	378	12,527
Macomb[3]	1977	36	162	885	5,847	110	1,651	146	7,498
Oakland	1977	93	886	17,071	77,125	362	6,388	455	85,513
	1982	120	480	5,922	34,180	893	12,947	1,013	47,127
Saginaw[3]	1977	33	89	446	4,809	130	1,859	163	6,668
Washtenaw	1977	34	167	1,273	8,925	191	1,287	225	10,212
	1982	46	126	1,173	9,087	424	2,870	470	11,957
Wayne	1977	1,206	4,594	33,389	223,230	4,500	68,403	5,706	291,633
	1982	916	3,377	32,255	227,810	6,590	85,538	7,506	313,348
Michigan	1977	1,719	6,952	59,278	354,102	6,792	95,241	8,511	449,343
	1982	1,446	5,374	49,443	337,914	10,824	132,415	12,270	470,329
United States	1977	39,968	164,177	1,135,144	6,396,850	191,235	2,248,350	231,203	8,645,200
	1982	38,631	165,765	1,530,799	8,529,062	300,608	3,914,510	339,239	12,443,572

SOURCE: Bureau of the Census, *1982 Survey of Minority-Owned Business Enterprises* (Washington, D.C., 1985), MB82-1, Tables 3, 6, and 7, and a similar document for 1977.
D: Withheld to avoid disclosing data for individual companies.
1: Pay period including 12 March.
2: Annual.
3: Data for 1982 not available.
4: Data for 1977 not available.
NOTE: 1977 county and city data compiled for area with 100 or more black-owned firms; 1982 county and city data compiled for areas with 250 or more black-owned firms.

slightly higher—$38,000. But in 1977 the average for this state was $53,000.

Over two-thirds of Michigan's black-owned enterprises were located in the city of Detroit in 1977; these businesses accounted for 57.5 percent of receipts among such undertakings in the state. The 1982 results show Detroit having 55 percent of the businesses and 57.9 percent of the receipts. In other words, although Detroit failed to keep pace in the number of black-owned enterprises, the average size of firms here declined considerably less than the statewide average. Information on total business activity in the City of Detroit, though sketchy, suggests that the black share has increased. Similar figures for the state suggest a decrease in Michigan as a whole.

Table 2 gives a breakdown of black-owned businesses by type of economic activity. In the city of Detroit, its suburbs, and in the rest of the state, over half of black business activity was in the area of retailing, a category which accounted for about a third of the U.S. total. This means that in every other group of industries in this state, the share of total was proportionately less. To some extent, the deep recession here in manufacturing, construction, and suppliers of various

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Bureau of Business Research
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Table 2
Black-Owned Business Enterprises in Michigan and the United States, by Industry Group: 1982

	All firms							
	City of Detroit		Detroit SMSA[1]		Michigan		United States	
Industry group	Number	Sales and receipts ($000)	Number	Sales and receipts ($000)	Number	Sales and receipts ($000)	Number	Sales and receipts ($000)
Agricultural services, forestry, fishing, and mining	71	832	90	1,212	115	1,583	5,105	165,387
Construction	389	15,833	507	19,292	688	25,755	23,061	994,816
Manufacturing	51	9,387	71	11,337	101	15,027	4,171	987,960
Transportation and public utilities	402	13,947	498	19,196	647	22,683	24,397	795,187
Wholesale trade	41	3,554	60	8,692	83	12,607	3,651	858,584
Retail trade	1,784	144,855	2,296	199,787	3,328	251,173	84,053	4,118,626
Finance, insurance, and real estate	319	12,609	436	14,496	585	16,433	14,829	748,136
Selected services	3,244	61,933	4,130	83,588	5,821	110,718	147,263	3,248,864
Industries not classified	497	9,455	643	11,171	902	14,350	32,709	526,012
Total	6,798	272,405	8,731	368,771	12,270	470,329	339,239	12,443,572

SOURCE: Bureau of the Census, *1982 Survey of Minority-Owned Business Enterprises* (Washington, D.C.: 1985), MB82-1, Tables 1, 4, 5 and 7.

1. The Detroit Standard Metropolitan Statistical Area is comprised of Wayne, Oakland, Macomb, St. Clair, Livingston, and Lapeer counties.

services to the goods-production industries skewed the data in favor of retailing. However, it also is true that large corporations are more dominant in this state than nationally which could mean that retailing offers the avenue of least resistance for entrepreneurs, regardless of race.

Note

1. U.S. Department of Commerce, Bureau of the Census, *1982 Survey of Minority-Owned Business Enterprises—Black* (Washington, D.C.: 1984), III-IV.

4/26/88 U9660-2

THE MICHIGAN ECONOMY

Volume 6, No. 4 Fall 1987

Published by the Bureau of Business Research, School of Business Administration

Michigan Climates

by DAVID I. VERWAY, *director, Bureau of Business Research, School of Business Administration, Wayne State University*

In what geographic areas do manufacturers invest? In the most recent tabulation of new capital expenditures by manufacturers, California is first with over $9 billion. Michigan is second with $5.7 billion. These figures are based on a survey conducted in 1986 by the Bureau of the Census in Washington, D.C. The data pertain to the year 1985.

Which state receives the lowest score in "general" manufacturing climate? Michigan does, just behind Ohio. California ranks thirtieth. First place goes to North Dakota. These rankings appear in the eighth annual study, *General Manufacturing Climates*, published by GrantThornton, Accountants and Management Consultants. The study was published in June 1987. In general, states which receive most manufacturing investment dollars are states where most manufacturing activity already is located. They are good places to put new investment because they produce the best return on investment dollars. But they also are places that bear the social costs associated with heavy industry. Therefore, they appear to have poor "business climates" in studies that focus on the cost side of the ledger and ignore benefits for manufacturers that locate in heavily industrialized areas.

The article which follows is an analysis of where Michigan fits in the national scheme of manufacturing, how we got to where we are, and where we seem to be headed.

DEVELOPMENT OF VEHICLE MANUFACTURING

Government statisticians first recognized automobile manufacturing as a distinct industry in the Census of Manufactures for 1905. There it is recorded that 9,023 of the 20,261 motor vehicles made in the United States during 1904 rolled out of Michigan factories. In 1914, Michigan produced 443,072 cars, trucks, and buses out of a national total of 569,054. Production here and nationally continued to grow unevenly until 1929. Michigan was a leader out of the Great Depression, setting new vehicle production records by 1935.

To satisfy burgeoning demand for Michigan-made cars and trucks, employers recruited laborers from rural Michigan and from Ohio, Kentucky, Tennessee, and other states, as well as from Canada, Ireland, England, France, Poland, and other European countries. The news of high wages in Detroit, Flint, Saginaw, Muskegon, and other automotive centers also reached Mexico, the Middle East, and more distant lands. As a result, although 3 percent of the U.S. population resided in Michigan in 1910, by 1920 the figure was 3.5 percent, in 1930, 3.9 percent, and in 1940, 4 percent.

During World War II, Southerners flocked to Michigan, the "Arsenal of Democracy." After the war, pent-up vehicle demand spurred Michigan's economy until the late 1940s. The Korean War was the stimulus during the early 1950s. In 1950, 4.2 percent of the nation's inhabitants lived in Michigan. The peak, 4.44 percent, was reached in 1956.

Migrants to the state tended to be poorly educated men and women who departed their rural homes for the well-paying production jobs that were so plentiful in Michigan's industrial centers. High wages enabled these people to raise and educate their children in a style superior to that which they had known as children. But because of Michigan's blue-collar orientation, there were insufficient numbers of suitable positions for these well-educated children. Along with other midwestern states, we have been a major source of the flow of educated young people to California, Arizona, and other western states. We also are a major source of retirees to Florida and other southern states. Many of these seniors simply are "going home."

While the emphasis has been the manufacture of automobiles and trucks, it also should be observed that other industries are important in the state. Grand Rapids is dominated by names like Steelcase, American Seating, Herman Miller, and Hayworth. Western Michigan is the country's center for the manufacture of office fixtures and furniture.

Northern Michigan provides limestone and iron ore for steel mills and cement plants located further south. The area also is Michigan's outdoor playground, attracting outdoor recreationers from nearby states as well as the industrial centers of southern Michigan.

Michigan also is a center for the manufacture of machine tools, robots, and large home appliances. We are one of the leading states in independent laboratories and a major force in research and development, generally because of the many tech centers operated by large corporations.

AUTOMOTIVE LABOR COSTS

Specialization, narrow job definitions, and high productivity relative to other industries are the handmaidens of mass production. In return, organized labor in the automotive industry demanded rigid work rules and above average pay.

Wayne State University
Detroit, Michigan 48202

Published bimonthly. Third class postage paid at Detroit, Michigan.
ISSN: 0730-272X

Pay increases over the years were validated by factory automation and by longer production runs as vehicles became more standardized.

The net result of productivity gains to accommodate rising paychecks has been a long-term decline in unit labor cost in vehicle manufacturing relative to unit labor cost in the private nonfarm economy. The phenomenon has gone largely unnoticed because critics of the automotive industry have focused on average hourly automotive earnings which have been increasing faster than the average for all workers over the longer time span. Also, from time to time unit labor cost in vehicle manufacturing has gotten out of hand. One such period was 1977-81, when the Japanese were establishing their strong presence on the North American continent. A 1982 analysis by Mordechai E. Kreinin showed that "within the U.S., unit labor cost in motor vehicles edged considerably ahead of that for all manufacturing, primarily because of the faster rise in labor compensation, which more than offset the small differential in productivity. Within Japan unit labor cost in autos moved in tandem with that of all manufacturing."[1]

Since 1981, relative unit labor costs in this country's automotive industry have declined dramatically; however, the damage has been done. Only through dramatic devaluation of the U.S. dollar has the U.S.-Japanese cost gap been closed. Meanwhile, the Japanese have established manufacturing bases in this country. Also, other countries, such as Korea, Mexico, and Yugoslavia, are a growing force in the North American market, following the pattern set by Japan.

The automotive industry has a long history of volatility in the marketplace. Like most durable goods, demand fluctuates widely. The industry also has been a relatively profitable one. To be prepared for the upcycle in sales, automotive companies developed the tactic of maintaining large labor reserves in the production centers during industry recessionary periods. High wages made this an attractive industry for men and women with few skills, below average education, and willingness to put up with the hazards, monotony, and general unpleasantness of the assembly line, press shop, paint shop, and so forth.

Liberal unemployment benefits kept the work force in place during downtime. Companies provided added incentive for the workers with supplemental unemployment benefits (SUB). Regular unemployment plus SUB provide an income guarantee of up to 95 percent of regular forty-hour weekly pay. This attractive incentive package helped maintain a ready labor reserve during automotive slumps so production could be increased quickly during recoveries.

MICHIGAN'S LABOR COST

From time-to-time the Bureau of Labor Statistics conducts surveys of the automotive industry. The most recent such undertaking was done in May 1983. The ensuing report, BLS Bulletin 2223 (published in March 1985), shows that median wages among production workers in motor vehicles stood at $11.95 in Michigan, exactly the same as the national average.[2] Earlier studies, completed in 1973 and 1963, revealed the same phenomenon; Michigan's average hourly pay for production workers in motor vehicles was the same as the national average.

Michigan is far more dependent on automotive and other high wage industries, such as steel, than are other states. These industries pay high wages, not just here, but everywhere. If Michigan wage rates are weighted with the industrial structure of the nation as a whole, which places far greater emphasis on lower paying industries, about 80 percent of the difference between average manufacturing wages in this state and in the nation disappears.[3] The remaining 20 percent could be a real difference, or it could be accounted for by Michigan's having a higher job skill structure, by our above average length of workweek and more premium pay, by greater productivity, and so forth.

AN AUTOMOTIVE CULTURE

Michigan became the leading automotive state, indeed the leading center for automotive production, research, and development in the world. Infrastructure, work force, and government institutions developed to suit this sort of industrial structure. In the days of mass production of large vehicles, Michigan was "the place." The state prospered exceptionally during the 1960s, the golden years for marketing large cars and small trucks built around large V-8 engines.

The 1973 and 1979 energy crunchs, the subsequent runup in petroleum prices, downsizing, outsourcing, materials substitution, imports, difficulties with quality, and productivity increases have taken a toll on the U.S. vehicle industry. Because Michigan was the pioneer state and host to a high proportion of the older plants, we bore the brunt of the 1979-82 skid in fortunes of the industry. Month after month we led the nation in job loss and unemployment gain. Just as government in this state was placed under increasing strain to maintain the safety nets for people crucial to the automotive industry, revenue was declining due to the recession.

Industries most affected were low skill, high labor content suppliers to the vehicle manufacturers. Riverside Products of Coldwater, for example, owned and operated four wiring harness plants in rural Michigan, paying its workers at or slightly above the minimum wage. The company now is located in South Bend, employs half a dozen people, and adds a plastic coating to toggle switches for military vehicles assembled nearby. Several other wiring harness plants also closed. Much of the production that has survived has shifted to Mexico as manufacturers take advantage of cheap labor available in the Maqiladora program that has developed under the auspices of the Mexican and the U.S. governments.

While Michigan has lost its attraction for some types of suppliers to the automotive industry, others find the climate here hospitable. General Motors has created two completely new, from-the-ground-up assembly plants—Poletown and Orion Township assembly. Buick City was created on the site of the old Buick complex. The Oldsmobile assembly plant in Lansing was re-equipped to produce the "N" car; Willow Run, the "H" car. Factories in the Pontiac area have been rededicated to produce pickup trucks. A former Fisher Body plant produces the Fiero. Mazda opened its new assembly plant in Flat Rock this year.

Chrysler Corporation has expanded its assembly capacity at "Dodge City" in Warren. Since its brush with bankruptcy in 1979, it has opened new assembly capacity in Sterling Heights. Chrysler is committed to building a new plant in east Detroit to replace its ancient Jefferson Avenue facility.

In short, modern assembly plants with the latest in factory automation are replacing the old. Jobs are being lost in the process because of the greater efficiency of the new plants and systems.

Until recently large integrated steel mills were losing markets in this country and in this state while small specialty mills and steel service companies were growing. Being newer, Michigan's steel industry fared better than the nation's as a whole. Currently, steel is staging something of a comeback through improved methods and products and also because larger vehicles are again popular.

The market for plastics has experienced rapid growth since 1982. Southeast Michigan has become the hottest market for engineering plastics with automotive applications. Because we have the skills, Southeast Michigan is the best place to establish laboratories and applications centers for plastics to be used in automobiles, trucks, and buses. Growth in high tech plastics activities is even more pronounced than growth in plastic fabrication.[4]

Southeast Michigan is the quintessential automotive culture. We have the bulk of automotive R&D in tech centers located here. In the most recent tabulation from the National Science Foundation, Michigan ranked second behind California in the volume of corporate-sponsored spending on industrial research and development.[5]

According to a recent issue of *Occupational Outlook Quarterly* (Winter 1986), published by the Bureau of Labor Statistics, 13.5 percent of the nation's mechanical engineers, 17.7 percent of the nation's tool and die makers, and 11.6 percent of the nation's metal and plastic-working machine operators work in this state. We are the nation's leader in those categories of skills. In other words, we provide the markets, the skills, the infrastructure, and the network for these increasingly high technology industries. Our reputation is international.

> The fastest growing high-tech corridor in the Unites States today is no longer Silicon Valley south of San Francisco, nor Route 128 around Boston, but a 40-mile strip in Michigan stretching west from Detroit to the leafy campus town of Ann Arbor. Locals call it Automation Alley, because two-thirds of all the robots and clever manufacturing tools made in America come from little firms along its length. How it was born again contains lessons for old industrial areas everywhere.
>
> Five years ago, the region was written off as "Rust Bowl America." Today, spurred by the modernisation of its car industry (with its nine graduate engineering schools, 500 R&D centres, 2,000 machining shops and $18 billion a year of local business in precision parts alone), southeast Michigan boasts the world's largest concentration of engineering manufacturers as well as the world's biggest cluster of car factories.[6]

Michigan, like the automotive industry which dominates it, is becoming "demature."

Michigan has workforce that is exceptionally well trained to make cars, materials, and components, and well disciplined to the ways of the factory floor and the irregularities of the business cycle. The supplier network here is capable of dealing with every aspect of material, transportation, insurance, tooling, research, and so forth. Its governments have evolved over the years with a knowledge of how to deal with the industry in supplying immediate services such as police and fire protection, utilities, and highways, as well as of longer term services such as education and training. There is a well-meshed system of independent consultants ready to deliver almost every imaginable service.

In short, there is an automotive culture in southeast Michigan that is prepared to supply a greater variety of goods and services to the automotive industry than can be found in a single cluster anywhere else in the world. Michigan is to the automotive world what Hollywood is to the entertainment world or New York to the financial world.

Michigan has an exceptionally bright future because of our good fortune in being the automotive capital. We also face troubled times because of plant closures—some announced, some still unknown. High tech Michigan cannot absorb the labor discarded by the "old tech" Michigan because the skills do not fit and because productivity continues to make inroads on the traditional market for labor skills. Unemployment and its drain on public and private resources will be a problem, but the problem will diminish with the passage of time and attrition in the ranks of discarded labor.

The expensive safety nets designed to retain this work force during recessions still exist and still are needed. We are a high wage state, at least in the southeast automotive and steel centers, because the dominant industries pay high wages. Therefore, the tone of the labor market here in the automotive centers is not inviting to many of the employers who might otherwise absorb some of the workers who have been discarded because their skills are in excess supply or are no longer appropriate to our economy.

GOVERNMENT IN MICHIGAN

In the latest ranking, Michigan was thirteenth in per capita taxes raised by state and local governments.[7] We were ninth in per capita property taxes, ninth in combined individual and corporate income taxes per capita, and thirty-fourth in general sales taxes per capita. We were forty-third in taxes on business as a percentage of total taxes.[8] These numbers show that Michigan is among the higher tax states per capita but that business is spared the heavy burden.

The data also show that the state is relatively more parsimonious with its revenue sharing with local units. That is why property taxes are relatively more onerous here. It also seems worth noting that Michigan has experienced two income tax rate cuts since these comparisons were made. Consequently, our ranking in total tax burden has declined. Quite likely we are now in the middle of the pack in tax collections per capita.

Michigan ranked third among the states in public welfare spending per capita, a legacy, no doubt of discarded labor from the automotive, mining, and steel industries. In public school spending per capita we ranked tenth and in spending per capita for higher education we ranked twentieth. In spending for highways we ranked forty-third. Since those data were prepared, we quite likely have improved our ranking in higher education and in highways because of a reallocation of state priorities.

Michigan ranked among the top fifteen states in per capita outlays for public safety and for corrections, a situation that probably has not changed much since 1985. The high unemployment and social problems associated with a large, economically displaced population will be a burden on this state into the 1990s.

In full-time equivalent employment of state and local governments per 10,000 population, Michigan ranked forty-first in 1985.[9] For education alone the ranking was twenty-eighth. In per capita government in functions other than education our rank was forty-fifth. These data show that our government

work force is among the more productive in the nation, a validation of their above average pay.

Michigan ranked twenty-fifth in guaranteed long-term state and local government debt outstanding per capita and forty-third in nonguaranteed debt.[10] In outstanding short term debt per capita, we were thirty-fifth. These numbers show that Michigan, more than most states, is prone to balance its revenues and expenditures. In per capita interest payments on general debt, Michigan ranked fortieth.

BUSINESS COST AND TAX STUDIES

In 1977, Arthur Andersen prepared an analysis of state and local taxes for the Ohio Development Sales Council. Michigan was the best among fourteen states if one were locating a distributorship. The analysis of taxes on a medium-size manufacturer put Michigan fifth from the bottom in cost, and the analysis for a large manufacturer put Michigan third from the top, after West Virginia and Indiana.[11]

The Division of Commerce and Industrial Development of the State of Missouri commissioned Price Waterhouse to conduct a study in the late 1970s. Among Twenty-one industrial states, Michigan was found to have the most favorable industrial tax base.[12]

In 1983, General Motors studied business costs in Michigan, Illinois, Indiana, Ohio, Pennsylvania, and Wisconsin. Michigan was dead last as a place to conduct small business. On the other hand, it trailed only Illinois as a good place to conduct capital intensive business, and Indiana and Illinois as a place to conduct labor intensive business.[13]

Professor James Papke, director of the Center for Tax Policy Studies at Purdue University, compared tax burdens between Indiana and selected other states. One of his principle findings was that "Indiana's tax system is decidedly competitive with one state in the midwest (Wisconsin), more or less neutral with respect to another (Illinois), and at a disadvantage with respect to the remainder (Michigan and Ohio)."[14]

The Upjohn Institute conducted a study of business costs here and in other Great Lakes states. The study showed state and local tax costs for eight hypothetical firms in each state, finding "the tax burdens for the three small firms in Michigan were virtually indentical to the Great Lakes averages for those firms. The same is true for one of the large firms. So four of the eight hypothetical firms in Michigan are already at the regional averages." The report also stated that "the problem areas in the Michigan business tax structure appear to be workers' compensation and property taxes."[15]

What is one to conclude about business costs in Michigan as compared with other states? First, state and local taxes per capita, are not a good basis for comparing business tax costs among the various states because most taxes do not fall on business. Second, Michigan's position seems to depend on the type of business, year, and assumptions about which taxes to include and the size of the business. In each of the analyses cited above, the businesses bearing the hypothetical tax burdens are themselves hypothetical. In no case does the element of productivity or the adequacy of public infrastructure enter into the evaluation. Nor does the matter of livability, or quality of life.

BUSINESS CLIMATE STUDIES

The Naisbitt Group gave a strong endorsement to Michigan in its 1985 analysis, *The Year Ahead, 1986*. The first two paragraphs of this book read:

> Michigan may well go down in history as the comeback state. In fact, in the year ahead, all six Great Lakes states—Illinois, Michigan, Minnesota, Ohio, and Wisconsin—will experience an economic renaissance that will startle traditional economists.
>
> What magic formula will set the "Rustbelt's" economic wheels in motion once again? No magic, but there is a formula. One part water—frequently referred to as the oil of the eighties—one part commitment to economic diversity, and one part determination to act in consort, speaking with one regional voice, to reverse years of decline.[16]

Whirlpool Corporation of Benton Harbor, Michigan, has a decidedly different view of the Winter-Water Wonderland. In its 1985 analysis, it ranked Michigan last among states in which it has manufacturing plants.[17] Tops was Arkansas, followed by Kentucky, Tennessee, Indiana, and Ohio. In fact, Whirlpool is closing its St. Joseph, Michigan, plant. The Whirlpool ranking is based on taxes, workers' compensation, unemployment compensation, state government revenue and expenditure, population, transportation, public assistance, and energy. Michigan ranked well on transportation and in selected areas of state expenditure but poorly in per capita taxes, unemployment compensation, and workers' compensation. Since that study was completed, Michigan taxes have been reduced, along with unemployment and workers' compensation costs. However, other states also have adjusted their tax and spending patterns.

In 1986, SRI International of Menlo Park, California, was commissioned to conduct a study of indicators of economic capacity. AmeriTrust Corporation of Cleveland, Ohio, commissioned the study. Entitled "Indicators of Economic Capacity," it focused on potential for economic growth through the application of new technology. It examined several accessible technology indicators, skilled and adaptable labor indicators, and capital availability indicators. Regarding Michigan, the AmeriTrust/SRI study made the following observations:

> Michigan is identified by some as an unattractive manufacturing business climate. The 1986 GrantThornton index actually ranks the state last among the 48 contiguous United States. The reasons cited include high state taxes, high percentage of unionized workers, and generous workers' compensation benefits.
>
> The AmeriTrust/SRI indicators portray Michigan's capacity for economic growth in a more realistic perspective. The skilled and adaptable labor force indicators show that the educational attainment of Michigan's population (measured by the percentages over 25 years of age having completed grade eight or less, high school, and at least four years of college) places the state in the middle tier among states on these indicators. Although scoring slightly below the national average for 16 to 24 year olds attending four-year colleges or universities, Michigan ranks among the top ten states for both non-college vocational and two-year college enrollment in this age group.
>
> Although state taxes are high, so are educational expenditures. Michigan ranks among the top 15 states in both expenditure per pupil at the K-12 level and overall educational expenditures per capita. The state appears to be benefiting to some extent from this investment: in educational achievement, it ranks among the top half of the 28 states reporting ACT scores.

Michigan's performance on the AmeriTrust/SRI accessible technology indicators is mixed. The quality and research output of the state's science and engineering faculty are among the 20 best in the country. On the other hand, scores on the university-based R&D indicators, as well as that on science and engineering Ph.D.s per capita, are at or below the national average. Reflecting the state's strong industry base, only five states have been issued more patents per capita than Michigan. Michigan's industry could apparently use its universities more, which is something the state government has recently been attempting to encourage.

On each of the capital availability indicators, Michigan ranks in the middle or upper third tier when compared with other states. The state scores well below the national average on capital in commercial banks per capita and venture capital funds per capita, but seems to have a supportive regulatory climate. No interest rate ceiling exists, branch banking is allowed, and state venture capital funds and loan guarantee programs are present.

In sum, the Michigan story is clearly mixed—revealing both strengths and weaknesses in the state's economic infrastructure. However, the AmeriTrust/SRI Indicators suggest that Michigan is better prepared than many states to meet the technology, labor, and capital needs of its economy.[18]

Making the Grade was published by the Corporation for Enterprise Development in March 1987. CED developed indexes to answer:

1. How well is the state's economy performing its job of providing people the opportunity for a better life?
2. How vital are the businesses that compose the state's economy?
3. What is the state's capacity for expanding growth and opportunity?
4. What policies has the state established to help foster business growth and economic opportunity?[19]

Regarding Michigan, the Corporation for Enterprise Development study had this to say:

> Michigan's report card, like many Great Lake states, bears the unmistakable imprint of a mature, well-developed industrial economy struggling to meet the challenge of a global restructuring of the industries which form its economic base. One one hand, its respectable Performance Index showing for income, job quality, and quality of life indicates a state that is succeeding in its battle for competitive position. On the other hand, lower scores on some employment and equity measures suggest a state experiencing both the long term effects of wholesale plant closings earlier in this decade and associated job losses for some formerly well-paid workers, and continuing difficulty for those who may always have been on the margins of the economy.
>
> Michigan's economic future will depend, in part, on how well it capitalizes on its not-insignificant competitive advantages (a diversified and well-developed manufacturing economy, and a history of investment in infrastructure and the welfare of its residents) and how effectively it remedies its liabilities (a poor record of in-state investment by financial institutions, for example).
>
> The Policy Index makes it clear that Michigan has taken among the most aggressive steps of any state to set the stage for renewed prosperity: new governance mechanisms to speed the development, adoption, and implementation of a comprehensive economic development strategy; creation of a variety of seed, expansion, and venture capital funds through the Michigan Strategic Fund, new pension fund investment policies, and new partnerships with conventional financial institutions; heavy investments in public education at all levels; creation of new applied technology centers to capitalize on those investments; a restructuring of job training programs; a variety of experiments to provide both workers and communities hard hit by plant closings and those who have never been in the economic mainstream with new employment opportunities; and a tax system capable of supporting these investments.
>
> Having made this extraordinary commitment to economic revitalization, Michigan will want to watch closely its progress in both the Performance and Business Vitality indexes.[20]

Inc. magazine also singles out Michigan and Pennsylvania for special mention. *Inc.* notes favorably the state's initiatives in venture capital as well as technical assistance to businesses. Pennsylvania, another birthplace of heavy industry, has made innovative moves to revitalize itself.

> It is impossible to quantify the impact of the Pennsylvania and Michigan programs on growth rates—both programs are relatively new, and there are simply too many variables to link cause and effect with scientific rigor. But both states have already experienced positive results: Michigan with its venture capital boom and Pennsylvania with a business birthrate that has spurted from half to double the national average.
>
> Both states stand to benefit from the fact that their governors focused on long-term, fundamental change. That is not the usual pattern, of course. In normal circumstances, politicians get re-elected by producing visible, short-term results: they chase smokestacks, they cut taxes, they push public loans out the door.[21]

Michigan occupied nineteenth place in the *Inc.* 1987 rankings in growth climate for new companies. We were twenty-fourth in 1986 and fortieth in 1985. These indexes have a relatively short-term focus because of year-to-year vicissitudes in states' economic fortunes. Alaska, for example, moved from second in 1986 to thirty-ninth in 1987. The total score in the *Inc.* ratings is based on job growth, business birth ratio, and percentage of fast-growth companies.

BACK TO GRANTTHORNTON

Done in cooperation with the Conference of State Manufacturers' Associations (COSMA), the annual study of General Manufacturing Climates is in its eighth year. The factors that make up the index are developed and refined each year in consultation with COSMA, state chambers of commerce, and others. Not all such organizations participate. For the most recent study, the factors were evaluated by manufacturing organizations from forty-three of the forty-eight states ranked. Alaska, Hawaii, and the District of Columbia are not evaluated by GrantThornton.

GrantThornton ranks the states on the basis of a composite of rankings on twenty-one individual factors. The factors for the most recent ranking, and the Michigan scores, are shown in Table 1. The factor weights were developed on the basis of COSMA opinions.

In a recent evaluation of the Alexander Grant ratings, Courant and Fulton note that

> These factors are dominated by the cost and tax side of the ledger. There is little recognition of the value to manufacturers of the provision of certain public services, with only vocational education and high school educated adults being included in the index. Expenditures on items such as public schools and higher education, and infrastructure, often cited as important factors in location decisions, do not contribute to the index score, and in

Table 1
Michigan's Ranking on Individual Factors in the GrantThornton General Manufacturing Climate: 1986

Rank		Factors	Factor weight (%)	Michigan rank
1	C1:	Wages	7.14	48
2	C3:	Unionization	6.81	48
3	D1:	Available work force	5.78	36
4	B4:	Workers' compensation insurance levels*	5.38	44
5	C2:	Change in wages	5.36	23
6	E1:	Education*	5.31	20
7	D4:	Energy costs	5.23	35
8	D3:	Value added	5.13	48
9	C4:	Change in unionization	4.81	14
10	A3:	Expenditure vs. personal income growth*	4.61	12
11	D2:	Manhours lost	4.57	33
12	B1:	Unemployment compensation benefits*	4.45	32
13	A1:	Taxes*	4.44	46
14	B3:	Average workers' compensation insurance payment*	4.39	44
15	A2:	Change in taxes*	4.18	44
16	B2:	Unemployment compensation net work*	4.17	43
17	E3:	Cost of living	3.82	31
18	A5:	State business incentives*	3.80	11
19	E4:	Transportation*	3.71	34
20	E2:	Health care	3.69	34
21	A4:	Debt growth vs. personal income growth*	3.22	4

SOURCE: GrantThornton, *The Eighth Annual Study of General Manufacturing Climates of the Forty-eight Contiguous States of America* (Chicago, IL: 1987), 35, 89.
*Indicates factor is controlled or strongly influenced by state or local governments.

fact can penalize it to the extent that they involve higher taxes. Other key location factors such as local supply networks and access to markets are not included, severely penalizing states such as those in the Great Lakes region in comparison to the more isolated states such as the Dakotas, Nebraska and Utah.

The irony of all this is that Michigan and the other Great Lake states are in a game of double jeopardy vis-a-vis Grant. The benefits of manufacturing networks and agglomeration economies that accrue to the more mature industrial regions are discounted or disallowed. The corresponding costs and support systems that also come with a higher-skill, less routine stage of industrialization are weighted heavily, and especially in tandem with state costs, are even multiple-counted.[22]

Courant and Fulton also found that,

> Overall, the Alexander Grant index of manufacturing business climate is not a reliable predictor of any of a large set of variables that are appropriate measures of manufacturing performance general business performance, or general economic welfare.[23]

WHERE MANUFACTURERS INVEST

The most recent Quinquennial Census of Manufactures, conducted by the Bureau of the Census, pertains to the year 1982. Results from the Annual Survey of Manufactures for the years 1983, 1984, and 1985 also are available at this writing. Table 2 shows the ranking of the top dozen states in new capital expenditures for the years 1982-1985. Michigan ranks highly in new capital outlays by manufacturers.

Each year the Census Bureau tallies industrial construction permits granted by local units of government in each of the states. Table 3 shows the rankings of the top dozen states for the years 1983-1986. Michigan ranks high in new factory construction.

Table 4 shows all of the states ranked according to new capital outlays by manufacturers in 1985. Also shown are the values of the rankings of industrial building permits for 1986, the GrantThornton rankings for 1986, and the Alexander Grant rankings for 1984. Alexander Grant & Company became GrantThornton as a result of merger.

The striking conclusion from Table 4 is the lack of relationship between new capital outlays by manufacturers and industrial climate. There also is a lack of relationship between industrial building permits and industrial climate. What the data do show is that there is a strong relationship between additions to the capital employed in manufacturing and the size of the manufacturing base that already exists. Courant and Fulton observe that "the index is of limited value as an indicator of business climate, and is probably much more successful as an inverse indicator of economic development."[24]

Table 2
Ranking of Top Dozen States in New Capital Expenditures by Manufacturers: 1983, 1984, and 1985

Rank	State	1983	State	1984	State	1985
		(millions of dollars)				
1	California	$6,932.4	California	$8,757.1	California	$9,157.8
2	Texas	5,429.4	Texas	5,606.6	Michigan	5,718.6
3	New York	3,545.6	New York	4,342.3	Texas	5,634.4
4	Ohio	3,132.2	Michigan	4,239.2	Ohio	5,061.2
5	Pennsylvania	2,998.3	Ohio	3,979.6	New York	4,845.5
6	Illinois	2,935.7	Pennsylvania	3,557.6	Illinois	4,069.0
7	Michigan	2,546.8	Illinois	3,363.9	Pennsylvania	3,987.6
8	North Carolina	2,419.1	North Carolina	3,114.3	North Carolina	3,221.2
9	Indiana	2,069.5	Indiana	2,627.9	Indiana	3,141.8
10	Louisiana	2,035.4	North Dakota	2,286.7	Massachusetts	2,678.1
11	South Carolina	1,859.9	Massachusetts	2,152.5	New Jersey	2,535.9
12	North Dakota	1,859.1	Georgia	2,127.0	Florida	2,311.4

SOURCE: Bureau of the Census, *Annual Survey of Manufactures, Geographic Statistics*, 1983, 1984 and 1985 (Washington, D.C.: annually), Table 1.

Table 3
Ranking of Top Dozen States in Valuation of Industrial Building Permits: 1984, 1985, and 1986

Rank	State	1984	State	1985	State	1986
		(thousands of dollars)				
1	California	$2,015,046	California	$1,930,198	California	$1,991,515
2	Florida	502,171	Michigan	554,069	Pennsylvania	541,855
3	Colorado	433,598	Florida	553,138	Michigan	523,908
4	Ohio	432,372	Indiana	530,976	Illinois	503,368
5	New York	407,293	New York	444,534	Florida	466,238
6	Texas	382,232	Texas	398,364	Massachusetts	423,309
7	North Carolina	357,836	Georgia	391,071	Georgia	369,302
8	Pennsylvania	345,720	Arizona	361,396	New York	366,080
9	Michigan	330,995	New Jersey	337,654	Ohio	305,927
10	Indiana	314,343	Illinois	333,803	Texas	294,995
11	North Dakota	268,304	Pennsylvania	328,303	Virginia	291,872
12	Massachusetts	266,088	North Carolina	315,808	New Jersey	289,610

SOURCE: Bureau of the Census, special release.

CONCLUDING REMARKS

Michigan is unlikely to become a center for textile production or the manufacture of cigarettes. We are limited in the skills and in the underlying culture that go with those industries. We are unlikely to become a world class financial center or insurance center for similar reasons.

Michigan's principle comparative advantage lies in the manufacture of motor vehicles and components and the technical activities that go with that specialty. A consequence of this focus is a developing comparative advantage in materials research and development, generally in factory automation and in computer applications. Even as routine manufacturers developed greener pastures elsewhere, other, more upscale companies find Michigan to be hospitable because of the high-tech clusters located in the Detroit-Ann Arbor, Grand Rapids (office automation), and Lansing (biotechnology) areas.

Important subspecialties include spectator sports, growing reputation as a center for entertainment, and for business travel and exhibitions. We are unlikely to become a Las

Table 4
Ranks of the 48 Contiguous States on New Capital Investment by Manufacturers (1985), Value of Industrial Building Permits (1986), and General Manufacturing Climate (1984 and 1986)

State	Investment	Building	GrantThornton 1984	GrantThornton 1986	Value added 1985	State	Investment	Building	GrantThornton 1984	GrantThornton 1986	Value added 1985
California	1	1	25	30	1	Kentucky	25	25	21	25	20
Michigan	2	3	48	48	6	Kansas	26	28	13	8	27
Texas	3	10	16	22	5	Iowa	27	34	26	27	24
Ohio	4	9	41	47	3	Arizona	28	18	12	7	33
New York	5	8	38	34	2	Arkansas	29	35	7	21	32
Illinois	6	4	42	42	4	Colorado	30	27	15	5	28
Pennsylvania	7	2	39	38	7	Oklahoma	31	39	23	24	30
North Carolina	8	14	8	9	8	Mississippi	32	40	6	12	31
Indiana	9	13	22	36	10	Oregon	33	33	44	39	29
Massachusetts	10	6	28	11	11	Maine	34	37	46	41	38
New Jersey	11	12	24	29	9	West Virginia	35	47	45	43	37
Florida	12	5	3	13	17	New Hampshire	36	31	27	17	35
Georgia	13	7	9	23	13	Utah	37	30	5	33	36
Wisconsin	14	19	31	31	12	Delaware	38	38	32	15	40
Tennessee	15	15	10	18	14	Vermont	39	41	33	14	42
Virginia	16	11	11	4	15	Nebraska	40	44	4	2	34
South Carolina	17	23	14	9	23	Idaho	41	43	18	16	41
Louisiana	18	36	40	45	25	Rhode Island	42	42	47	37	39
Minnesota	19	17	35	32	19	New Mexico	43	26	29	19	43
Missouri	20	22	20	6	16	Nevada	44	32	17	10	45
Alabama	21	29	19	28	21	South Dakota	45	46	1	3	44
Connecticut	22	16	36	35	18	Wyoming	46	24	43	44	48
Washington	23	20	37	40	22	North Dakota	47	45	2	1	47
Maryland	24	21	30	20	26	Montana	48	48	34	46	46

SOURCE: Bureau of the Census, *1985 Annual Survey of Manufactures* (Washington, D.C.: 1987), Table 1; Bureau of the Census, special release; Alexander Grant & Company, *The Sixth Annual Study of General Manufacturing Climates of the Forty-eight Contiguous States of America* (Chicago, IL: 1985), 29; and GrantThornton, *The Eighth Annual Study of General Manufacturing Climates of the Contiguous States of America* (Chicago, IL: 1987), 10.

THE MICHIGAN ECONOMY
Bureau of Business Research
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Vegas, but we are aiming to rival Chicago, Boston, and Atlanta in the years ahead as a destination for business travelers.

Having embarked on a strategy of diversification into high technology activities and into entertainment, retailing, travel and tourism, information services, and so forth, Michigan faces a challenge in maintaining the momentum because of troubled times in its old manufacturing base. Revenue growth in state and local government is slow because of these economic adjustments. Pressure on the social services budget is strong. Meanwhile, the need to increase funding for transportation and for education is urgent, because those programs are primary to maintaining vibrant high technology industries. The key to our future lies in nurturing our predominant growth industries, even if that means perpetuating our hammerlock on last place in the GrantThornton ranking, which itself is irrelevant as a guide to policy for a high technology, service-oriented future. It does not, after all, claim to measure anything other than manufacturing climate.

CITATIONS

1. Mordechai E. Kreinin "U.S. Foreign Trade: Performance and Prospects," *The Economic Outlook for 1982*, Twenty-ninth Annual Conference on the Economic Outlook (Ann Arbor, MI: The University of Michigan, 1981), 249.

2. U.S. Department of Labor, Bureau of Labor Statistics, *Industry Wage Survey: Motor Vehicles and Parts, May 1983*, Bulletin 2223 (Washington, D.C.: 1985), 7.

3. David I. Verway with Roger L. Bowlby, "Factory Wages and the Industrial Classification," *Michigan State Economic Record* (East Lansing, MI: June 1963).

4. David I. Verway and Gary Shields, "The Plastics Industry in Southeast Michigan," *The Michigan Economy*, Vol. 5, No. 5-6 (Detroit, MI: 1986).

5. National Science Foundation, special release.

6. *The Economist*, 11 April 1987, 15.

7. Bureau of the Census, *Government Finances, 1984-85*, Table 13 (Washington, D.C.: 1986), 19.

8. Advisory Commission on Intergovernmental Relations, *Significant Features of Fiscal Federalism 1979-80 Edition* (Washington, D.C.: 1980), 68.

9. Bureau of the Census, *Public Employment in 1985*, GE85-No.1 (Washington, D.C.: 1986), 33.

10. Advisory Commission on Intergovernmental Relations, *Significant Features of Fiscal Federalism 1987 Edition* (Washington, D.C.: 1987), 142.

11. Arthur Andersen & Co., *Comparative Study of State and Local Taxes*, prepared by the Ohio Development Sales Council (Columbus, OH: 1977), 3.

12. Price Waterhouse & Co., *State Tax Comparison Study*, Division of Commerce and Industrial Development of the State of Missouri (St. Louis, MO: 1978), 7.

13. General Motors Corporation study on Automotive Suppliers in Michigan for the Governor's Commission on Jobs and Economic Development, (unpublished) August 1983.

14. James A. Papke and Leslie E. Papke, "The Competitiveness of Indiana's Business Tax Structure," *Indiana's Revenue Structure: Major Components and Issues* (West Lafayette, IN: Purdue University), 78.

15. Timothy L. Hunt, *Michigan's Business Tax Costs Relative to the Other Great Lakes States* (Kalamazoo, MI: W. E. Upjohn Institute for Employment Research, 1985), 159.

16. John Naisbitt and the Naisbitt Group, *The Year Ahead 1986* (New York: Warner Books, 1985), 5.

17. Whirlpool Corporation, Government and Public Affairs Department, *Manufacturing States Comparative* (Benton Harbor, MI: 1985), 3.

18. Ameritrust/SRI, *Indicators of Economic Capacity*, First Report (Cleveland, OH: 1986).

19. The Corporation for Enterprise Development, *Making the Grade, The Development Report Card for the States* (Washington, D.C.: 1987), 9.

20. Ibid., 68, 69.

21. "Coast to Coast," *Inc.* (October 1987), 89.

22. Paul N. Courant and George A. Fulton, "What Do Business Climate Studies Have to Do with Business?" Institute of Public Policy Studies Discussion Paper No. 243, presented at the 33rd Annual conference on the Economic Outlook, (Ann Arbor, MI: The University of Michigan, 1985), 7.

23. Ibid., 27.

24. Ibid., 9.

U9660-2
8/29/88

THE MICHIGAN ECONOMY

Vol. 7, No. 1 Winter 1988

Published by the Bureau of Business Research, School of Business Administration

International Trade

by DAVID I. VERWAY, *director, Bureau of Business Research, Wayne State University*

According to data recently released by the Bureau of the Census, the value of direct manufactured exports from the state of Michigan exceeded $10.5 billion during 1984. California and Texas were the two other states with figures in excess of $10 billion. Manufacturers in California reported $17.1 billion in exports. The Texas figure was $11.3 billion.

Supporting, or indirect, exports are those required by direct exporters of manufactured products. The steel in cars sent to Canada would be an example of a supporting export. In this category, Michigan was seventh with $6.1 billion. California was first; Texas, second; Ohio, third; Pennsylvania, fourth; Illinois, fifth; and New York, sixth.

The number of Michigan jobs directly and indirectly tied to the exportation of manufactured products totaled 193,800 during 1984. This figure represents 4.9 percent of total Michigan civilian employment during that year. Using the percentage figures as indices of export dependence, Michigan was tied with Indiana and ahead of every other state except Connecticut (6.0 percent), Ohio (5.1 percent), and Massachusetts (5.0 percent). Nationwide, the rate of export dependency was 3.8 percent.

WHY TRADE?

Although consumers benefit, the impetus for free trade has traditionally come from producers, capitalists intent on expanding markets for their products. Through free trade, countries are able to produce goods and services in which they have a comparative advantage and trade them for those in which they do not.[1]

The United States itself is an example of how free trade areas benefit from unrestricted access to each others' markets. Office furniture, a Grand Rapids specialty, is marketed nationwide. North Carolina has a comparative advantage in furniture for the home. California is the premier wine producer. Nevada is famous as an entertainment center. If states were to create trade barriers against each other, consumers, as well as producers, would lose. Michigan would produce more household furniture than it now does but at a higher price to consumers. Many workers now employed in making office furniture would shift to making household furniture, at a lower wage. The state's imports of household furniture would decline as would its exports of office furniture.

As laborers, managers, and capitalists, we are more productive in an open economy because we can play to our comparative advantage. Average income is greater than it otherwise would be. As consumers, we pay less for the goods and services available and have a greater variety of them than would be the case if the nation consisted of fifty "protected" economies.

DIRECT EXPORTS

During spring 1985, all manufacturing establishments with 250 or more employees and a sample of establishments with fewer than 250 were asked by the Bureau of the Census to report the value of their direct exports to other countries during the previous year. Direct exports are products sent directly from the plant to another country or those known to have been exported, without further processing, through a broker or another intermediary.

The purpose of the survey was to develop estimates of the geographic origin of total manufactured exports. The results of the census survey of establishments were used to estimate United States export figures by state and by industry. The results represent the value of the shipment at the plant, before transportation and other costs of getting it to the United States border were added.

Table 1 shows the direct export totals for Michigan and the United States since the export origin program was initiated by the Bureau of the Census. In 1963 Michigan factories accounted for less than 6 percent of the U.S. figure. In fact, we stood sixth in the national rankings for total manufactured exports, behind California, New York, Ohio, Illinois, and Pennsylvania. In 1972, with 9.6 percent of the U.S. total, Michigan was well ahead of every other state, including California. The impetus for this extraordinary growth was the automotive trade agreement with Canada.

AUTOMOTIVE TRADE

The Automobile Products Trade Act of 1965 ratified an agreement with Canada which sanctioned conditional tariffs among manufacturers who produced automobiles, trucks, or buses in both the United States and Canada. In return for promises to adhere to production requirements to protect the smaller, less viable Canadian industry, manufacturers were allowed duty free importation of parts for new motor vehicles as well as complete new vehicles themselves. The agreement, now known as Autopact, was a compromise between Ottawa, Washington, and Detroit, resulting from Canada's dis-

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Published quarterly. Third class postage paid at Detroit, Michigan.
ISSN: 0730-272X

Table 1
Value of Direct Exports of Manufactured Products from Michigan and the United States, Selected Years

Year	Value ($000,000) Michigan	United States	Michigan as a % of U.S.
1960	918.0	16,092.5	5.7
1963	1,086.3	18,289.0	5.9
1966	1,568.2	21,299.2	7.4
1969	2,613.1	29,210.0	8.9
1971	2,834.0	33,132.3	8.6
1972	3,522.3	36,608.0	9.6
1976	6,374.1	83,098.0	7.7
1977	6,937.4	85,795.9	8.1
1980	8,764.5	151,216.2	5.7
1981	10,275.0	164,283.1	6.3
1983	10,070.3	141,586.1	7.1
1984	10,588.4	150,963.6	7.0

SOURCE: Bureau of the Census, *1984 Annual Survey of Manufactures Origin of Exports of Manufactured Products* (Washington, D.C.: 1987), M84(AS)-5, Tables 3a and 3b; and similar documents for previous years.
NOTE: Dollar figures are not adjusted for price inflation.

satisfaction with its trade deficit in vehicles. At the time of the agreement, Canadians consumed about 7 percent of North American-made vehicles and parts, but their share of production activity was only about 4 percent. Their chronic trade deficit in vehicles accounted for nearly a third of their total trade deficit.

The deficit occurred in the face of tariffs of 17.5 percent and 25 percent, respectively, on vehicles and parts. While these trade barriers were responsible for the existence of the Canadian industry, they fostered inefficiencies in vehicle manufacturing. In one case, for example, a company produced "some sixty different models of five distinct passenger lines at its assembly plant in Canada," while "just across the river on the U.S. side, Ford's great River Rouge assembly plant produces only three models of the Mustang line."[2] Similar experiences could be cited for General Motors, Chrysler, and American Motors. The inability to operate at efficient levels behind the tariff walls meant that vehicle prices in Canada were considerably above those in the United States. Lower productivity meant that Canadian automobile workers earned 20 to 25 percent less than their American counterparts.

The Canadians had instituted an export rebate scheme as a means of encouraging more manufacture of vehicles and parts production on their side. This scheme entailed credits against import tariffs for products that were exported to the United States or, for that matter, anywhere else. The export rebate scheme was found to be an illegal export subsidy, from the United States perspective, and would have required countervailing tariffs on Canadian exports of these products to the United States.

Agreements made between the government of Canada and the four large automotive producers required the companies to increase the aggregate value of their Canadian output above that in the base year (1964 model year) by $260 Canadian by the 1968 model year (ending 31 July 1968). In addition, the companies were required to increase their output of vehicles and parts "by an amount equal to 60 percent of the growth in their market for automobiles sold for consumption in Canada and by an amount equal to 50 percent of the growth in their market for commercial vehicles sold for consumption in Canada." They also promised to at least sustain the ratios of their Canadian production to Canadian sales.

The elimination of content requirements on each vehicle produced in Canada, along with tariff-free trade between the two countries, was intended to facilitate rationalization of North American motor vehicle production. It was envisaged that fewer models would be produced in Canadian plants, allowing vehicles to be produced more efficiently in longer productions runs. These Canadian plants would supply some models for the Canadian market as well as elements of the American market. At the same time, models whose Canadian production had been suspended would be produced in the United States and sent to the Canadian market. Similar rationalization was anticipated for the production of parts for new vehicles.

Washington was motivated by the realization that the Canadian situation was regarded as untenable in Ottawa and that the Canadians would go so far as to erect high trade barriers in order to correct it. The Johnson administration also seemed convinced that the benefits that would accrue to Canada by way of increased efficiency would not necessarily be harmful to the automotive workers on this side of the border.

> For American labour the chief benefit of the Agreement was assurance of a continued growth in the market for exports to Canada, bringing with it the future need for additional workers to supply that market. The rationalization of the industry would involve the transfer of the production of some models and parts to Canada, but any dislocations that arose would probably be minor, and over-all growth in job opportunities plus the adjustment assistance program would ease the burden.[3]

The value of cross-border shipments of vehicles and new parts increased nearly tenfold between 1965 and 1973, going from $1.1 billion to $11 billion (see Table 2). Between 1965 and 1969 the value of Canadian exports of completed vehicles to the United States rose by a little over $2 billion, and parts exports rose by $820 million. U.S. exports of completed vehicles to Canada increased by $834 million, and of parts, $1.4 billion. Unit export figures are shown in Table 3. Within the Canadian industry itself, the growth in motor vehicle assembly came to nearly 70 percent and growth in parts manufacturing to nearly 80 percent. (Growth figures are based on the value of shipments from Canadian factories, not shown in Table 2.) This country's automotive sector was sluggish between 1965 and 1969, exhibiting growth of 10 percent in shipments of motor vehicles and parts. Michigan factories increased [illegible] production by 13 percent. Parts manufacturing both [illegible]nally and in Michigan grew very little; most of the au[illegible]e growth took place in establishments that assemble [illegible]d trucks. There seems to have been a shift toward "in[illegible]" sourcing of parts within the U.S. assembly plants th[illegible]es which, coupled with the increased imports from C[illegible]ada, caused distress among Michigan suppliers to the vehicle manufacturers. On balance, Michigan's share of total motor vehicle and parts manufacturers' shipments increased somewhat between 1966 and 1969.

Table 2
United States-Canada Trade in Automotive Products, U.S. Imports from Canada and Canadian Imports from the United States
(millions of U.S. dollars)

Year	Canadian Imports[a]			U.S. Imports[b]		
	Vehicles	Parts	Total	Vehicles	Parts	Total
1964	57	577	634	22	49	71
1965	142	738	880	88	139	227
1966	356	1,011	1,367	451	360	811
1967	666	1,216	1,882	920	474	1,394
1968	923	1,684	2,607	1,483	783	2,266
1969	976	2,134	3,110	2,097	959	3,056
1970	894	2,019	2,913	2,038	1,080	3,118
1971	1,319	2,448	3,767	2,511	1,481	3,992
1972	1,579	2,866	4,445	2,778	1,795	4,573
1973	2,082	3,552	5,634	3,061	2,172	5,233
1974	2,573	3,980	6,554	3,482	1,997	5,479
1975	3,064	4,409	7,472	3,726	2,008	5,734
1976	3,339	5,550	8,889	4,840	2,983	7,823
1977	3,712	6,434	10,146	5,636	3,496	9,132
1978	3,771	7,080	10,851	6,165	4,160	10,326
1979	4,801	7,344	12,145	5,685	3,831	9,715
1980	3,950	6,478	10,428	5,695	2,888	8,583
1981	4,218	7,700	11,918	6,917	3,462	10,379
1982	3,030	7,824	10,853	9,001	3,963	12,964
1983	4,855	9,270	14,125	10,877	5,724	16,601
1984	6,356	11,102	17,458	14,794	7,321	22,119
1985	7,726	12,084	19,810	15,887	8,429	24,316
1986	8,241	12,723	20,964	16,000	8,331	24,331
1987[c]	8,534	12,592	21,126	14,435	9,060	23,495

SOURCE: U.S. Department of Commerce, special release.
a. Canadian import statistics from United States, based on FAS or transaction values, converted to U.S. dollars on the basis of then prevailing exchange rates.
b. U.S. imports from Canada are FAS or transaction values as published by the Bureau of the Census.
c. Based on first 6 months.

Between 1969 and 1973, the value of Canadian exports of completed vehicles to the United States increased by slightly less than $1 billion, compared with $1.2 billion in parts. U.S. exports of completed vehicles to Canada increased by $1.1 billion between 1959 and 1973, and of parts, $1.4 billion. The dollar volume of total shipments from the Canadian assembly industry rose by about 25 percent during this time, and from the Canadian parts industry by about 50 percent, for an overall increase of about 33 percent in the automotive sector. In this country, shipments from the vehicle assembly and parts industries grew, respectively, 50 percent and 28 percent; and in Michigan, 38 percent and 40 percent, for overall increases of 37 percent (U.S.) and 40 percent (Michigan). Again, as during the 1966-1969 period, shipments from motor vehicle and parts plants in Michigan increased more rapidly than the Canada-U.S. total.

In summary, although Michigan's export growth between 1966 and 1969 was stimulated by Autopact, its automotive parts sector was jolted as a result of the rapid Canadian expansion. Increased Canadian output at the expense of Michigan's automotive supplier industry more than outweighed the increase in Michigan exports of parts and vehicles to Canada. Between 1969 and 1973, Michigan made modest gains in the bargain with Canada, both in motor vehicle assembly and in parts production.

The fact that Michigan more than held its own within the U.S. segment of the automotive industry might be attributable to the fact that Autopact gave this state a distinct locational advantage. The Detroit-Windsor area increasingly became the fulcrum of the Canada-U.S. automotive industry. Prior to the Autopact, the Canadian market caught the attention of far fewer U.S. manufacturers. Other factors giving Michigan a competitive edge over most states were tri-level rail cars, which made it more economical to centralize production and ship to distant points like California, and the import invasion from overseas, which eroded the coastal markets for domestic makes more than those in the midcontinent. These were among the factors in Chrysler's decision to close its Commerce, California, plant in 1971.

Since 1980, the North American vehicle industry has experienced a dramatic transformation that has eroded our comparative advantage. This erosion, coupled with a sharp decline in value of Canadian currency, has created the sizeable imbalance in automotive trade with Canada. Thus,

Table 3
Factory Sales of Motor Vehicles from Canadian and U.S. Plants by Destination
(thousands of units)

Year	Plants in United States				Plants in Canada				U.S.-Canada Total
	Exports to Canada	Other Exports	U.S. Domestic	U.S. Total	Exports to U.S.	Other Exports	Canada Domestic	Canada Total	
Passenger Cars									
1964	15	183	7,554	7,752	—	38	518	557	8,308
1965	48	159	9,121	9,326	34	40	631	704	10,031
1966	122	140	8,337	8,598	161	37	494	692	9,290
1985	636	30	7,337	8,002	878	6	184	1,067	9,071
1986	635	30	6,878	7,543	870	5	170	1,055	8,568
1987[a]	522	51	6,461	7,034	636	1	116	753	7,787
Trucks and Buses									
1964	3	160	1,377	1,540	—	7	103	110	1,650
1965	10	126	1,616	1,752	7	16	119	142	1,893
1966	20	105	1,607	1,731	58	23	114	195	1,926
1985	198	33	3,126	3,357	678	8	163	854	4,211
1986	228	34	3,130	3,393	637	4	150	791	4,184
1987[a]	265	40	3,429	3,734	605	5	143	753	4,487

SOURCE: Motor Vehicle Manufacturers Association of the United States, Inc., special release.

even while our share of U.S. exports of automotive products to Canada has increased, we have lost jobs as a result of displacement of our own domestic markets by Canadian imports.

Structural change has worked against Michigan's automotive industry because we were the pioneering state in mass production of vehicles. Consequently, our industry has a high proportion of the most antiquated and least productive factories. These establishments are the likeliest candidates for closure to reduce capacity.

On the other hand, Michigan does have several new assembly plants and over one-quarter of the U.S.-Canada assembly capacity for cars, trucks, and buses. This cluster of vehicle manufacturing activity and technology is Michigan's major asset in attracting new suppliers and in persuading existing suppliers to stay and expand. We have a distinct comparative advantage in attracting research, development, and specialty manufacturing, such as exotic plastic components, as a result of being in the automotive heartland.

For the Canadians, the price of an integrated North American vehicle industry has been a diminishment of the level of autonomy they once possessed. Once semiautonomous, the Canadian subsidiaries of the American companies that produce there are now much more closely linked to Detroit. As a consequence, much of the research and development and managerial activity has shifted to southeast Michigan, buttressing our already strong design, research, and development capabilities. Since 1980, among the fastest growth industries in the state have been business services and robotics, both linked to the automotive industry as suppliers of new technology for the management of workers and production of vehicles.

OTHER EXPORTS

Michigan's other industries are so overshadowed by Detroit's Big Three and their suppliers that they are easily overlooked in an analysis of phenomena that move the economy. The Grand Rapids area is the heart of the country's office furniture and fixtures industry, with names like Herman Miller, Steelcase, American Seating, Hayworth, Harter, Westinghouse and Shaw-Walker. Furniture and fixtures is one of the state's growth industries. Also, about 12 percent of exports of furniture and fixtures from this country originate in Michigan (Table 4). During the 1960s, Michigan's share of total exports of furniture and fixtures amounted to about 4 percent.

Several of the categories in Table 4 include industries which supply automotive plants in various ways. Storage batteries, electric lights for motor vehicles, and ignition components, if fabricated in a factory distinct from a vehicle assembly or body plant, are tabulated in the electrical and electronic equipment group. An automotive glass manufacturer, such as the glass plant at Ford's River Rouge works, is classified in the stone, clay, and glass group. A tire manufacturer is classified in rubber and miscellaneous plastics; a piston ring, piston, or valve manufacturer in nonelectrical machinery. Steel mills and foundries that ship iron or steel castings fall in the primary metal industries, even if their products become components of motor vehicles.

Seat belts and soft interior trim for automobiles are miscellaneous textile products in the lexicon of industrial classification. That is why Michigan is a major exporter of apparel and miscellaneous textile products. As a matter of fact, very few other kinds of apparel or other textile products plants are located in the state.

SUPPORTING MANUFACTURED EXPORTS

Indirect manufactured exports include components, parts, and supplies that are made in other plants and incorporated into the products of plants which actually export. These supporting or embodied exports were evaluated by means of an input-output matrix, a set of equations designed to measure, among other things, how much every other industry must produce to enable any one industry to export what it does. After making these calculations for each industry, the Bureau of the Census allocated the figures among the states based

Table 4
Value of Direct Exports of Manufactured Products from Michigan

	Value ($000,000)						Percentage of U.S.					
Industry group	1960	1966	1972	1977	1980	1984	1960	1966	1972	1977	1980	1984
Food & kindred products	29.2	51.4	61.1	153.4	153.2	212.4	2	3	2	2	1	2
Apparel & other textile products	2.9	(1)	(1)	78.7	166.4	240.2	2	(1)	(1)	10	12	22
Lumber & wood products	2.8	(1)	(1)	12.1	9.6	18.3	2	(1)	(1)	1	—	1
Furniture & fixtures	1.4	(1)	(1)	21.2	42.3	60.1	4	(1)	(1)	10	11	12
Paper & allied products	3.9	8.8	16.8	29.3	31.3	76.2	1	1	2	1	1	2
Chemicals & allied products	99.2	115.7	180.3	404.5	512.2	658.7	5	5	5	4	3	3
Rubber & miscellaneous plastics products	6.9	15.3	35.3	62.1	77.4	105.8	3	5	7	4	3	4
Stone, clay, and glass products	12.3	23.8	48.9	75.9	102.3	75.6	6	8	12	8	6	5
Primary metals industries	60.4	46.5	126.1	196.4	221.4	133.5	5	4	8	7	3	3
Fabricated metal products	22.8	82.9	312.1	514.3	701.0	843.4	5	9	22	12	11	14
Machinery, except electrical	169.2	326.0	464.2	985.5	1,698.4	1,192.5	5	7	6	5	5	4
Electronic & electric equipment	24.9	42.0	131.2	188.3	255.2	332.9	2	3	4	2	2	2
Motor vehicles & motor vehicle equipment	450.0	770.0	1,720.0	4,100.0	4,550.0	6,400.0	35	40	43	43	(1)	47
Instruments & related products	12.0	27.7	27.8	63.4	252.5	116.2	2	3	2	1	2	1
Miscellaneous manufacturing industries	12.7	21.2	(1)	20.4	18.4	33.1	2	2	(1)	1	1	2
TOTAL	918.0	1,568.2	3,522.2	6,937.4	8,764.5	10,588.4	6	7	10	8	6	7

SOURCE: Bureau of the Census, *1984 Annual Survey of Manufactures Origin of Exports of Manufactured Products* (Washington, D.C.: 1987), M84(AS)-5, Tables 4a and 5a; and similar documents for previous years.
(1) Data not available.
NOTE: Definitions of industry groups have changed over the years. Industry group data are not strictly comparable, pre-1977 and 1977-1984.

on each state's share of U.S. production that was not exported.

California had $11.7 billion in supporting manufactured exports during 1984, followed by Texas ($10.8 billion), Ohio ($8.4 billion), Pennsylvania ($7.0 billion), Illinois ($6.9 billion), New York ($6.2 billion), and Michigan ($6.1 billion).

JOB CREATION

Michigan had an estimated 117,700 jobs in its manufacturing industries as a result of direct and supporting manufactured exports in 1984. That figure compares with 147,500 in 1980, and 132,700 in 1977. The broad industrial breakdown of these figures is shown in Table 5.

Also shown in Table 5 are data on export dependence for Michigan and on Michigan's share of U.S. export-related manufacturing employment. Generally speaking, both in this state and nationally, exports were becoming increasingly more important during the last three years of the last decade. These phenomena occurred as a result of increased real exports coupled with general sluggishness in manufacturing activity in this country. Between 1980 and 1984, exports diminished in importance due to increasingly noncompetitive U.S. and Michigan industries in the world market coupled with revival of domestic markets for manufactured goods.

Michigan's experience also was affected by differential productivity changes among the employed in manufacturing industries. Between 1979 and 1980, output per worker in this state deteriorated in comparison with the national average. It seemed to be a case of management simply hanging on to redundant wage and salary workers, more so in Michigan than elsewhere. Between 1980 and 1984, there was a reversal in this differential, with productivity growth in the Wolverine State far outstripping the national average.

Michigan faces an additional problem in its industrial structure. The faster growing export industries are not located in this state. We have focused on automotive products, whereas other industries fare better on the international scene.

Scrapping a sizeable share of the U.S. vehicle parts industry, especially in the Midwest, is creating a manufacturing sector more and more like that of Canada. Vehicle assembly here is becoming more dependent on the importation of parts. This "hollowing out" of American industry has seriously eroded our ability to correct the imbalance in merchandise trade with other countries, even with the depressed dollar which makes foreign goods more expensive in this country and our own goods more attractive on world markets.

FREE TRADE WITH CANADA

In March 1985 Prime Minister Bryan Mulroney and President Ronald Reagan signed the Declaration on Trade in Goods and Services, setting the stage for Canada-U.S. negotiations which began in June 1986. Events were culminated on 4 October 1987 when negotiators announced an agreement in principle which, among other things,

- removes tariffs on goods flowing between our two countries,
- liberalizes trade in services,
- liberalizes restrictions on cross-border investments,
- establishes mechanisms for settling disputes and for interpreting the agreement.

The agreement will create a free trade area similar to the one between the United States and Israel. Both countries will be allowed to keep trade barriers against third countries while removing those against each other, with some exceptions.

Table 5
Michigan's Civilian Employment Related to Manufactured Exports

	Michigan manufactured export-related employment (000)			Michigan manufactured, export-related employment as a percent of MI employment			U.S. manufactured, export-related employment as a percent of U.S. employment			Michigan manufactured export-related employment as a percent of U.S. manufactured export-related employment		
	1977	1980	1984	1977	1980	1984	1977	1980	1984	1977	1980	1984
Food and kindred products	1.4	1.6	1.3	3.0	3.5	3.2	3.7	5.0	3.7	2	2	2
Apparel, other textile products	1.7	2.4	1.9	6.6	12.9	9.3	2.0	3.6	2.0	6	5	8
Lumber and wood products	1.1	1.2	.6	7.3	8.5	5.1	7.3	10.7	6.6	2	2	1
Furniture and fixtures	.6	.6	.5	2.7	2.6	2.5	1.7	2.4	2.4	7	5	5
Paper and allied products	1.5	2.0	1.8	6.4	8.8	8.8	8.5	11.4	9.7	3	3	3
Printing and publishing	.4	.9	1.2	1.1	2.3	3.2	1.9	2.4	3.9	2	3	2
Chemical and allied products	5.4	5.9	5.1	15.9	19.0	17.1	13.7	18.6	15.1	4	3	3
Rubber, miscellaneous plastics products	2.9	2.4	4.2	8.1	9.4	11.1	8.8	11.1	11.1	5	3	5
Stone, clay, glass products	1.9	2.1	1.5	9.4	11.6	9.5	6.5	8.6	7.3	5	4	4
Primary metal industries	13.3	12.9	10.0	16.0	18.7	18.5	15.4	19.5	19.1	8	6	6
Fabricated metal products	19.9	19.6	18.3	13.9	16.5	15.8	10.4	11.8	11.8	12	10	11
Machinery, except electrical	21.8	26.1	18.1	14.9	17.0	14.8	18.4	21.5	19.9	6	5	4
Electric, electronic equipment	4.0	4.7	4.6	11.7	13.5	15.0	14.1	16.6	18.7	2	1	1
Transportation equipment[1]	39.4	39.5	31.6	12.2	15.9	12.7	14.0	17.5	12.8	16	13	14
Instruments, related products	1.6	2.5	1.8	13.7	19.6	12.5	17.6	18.9	16.0	2	2	2
Miscellaneous manufacturing industries	.6	.3	.3	5.5	2.8	3.9	6.6	8.8	6.5	2	1	1
Central administration offices, auxiliary	14.3	21.7	13.6	13.6	17.1	12.9	10.9	13.7	12.5	12	12	9
Total manufacturing	132.7	147.5	117.7	11.9	14.5	12.5	10.2	12.8	11.4	7	6	5

SOURCE: Bureau of the Census, *1984 Annual Survey of Manufactures Origin of Exports of Manufactured Products* (Washington, D.C.: 1987), M84(AS)-5, Tables 4a and 5a; and similar documents for previous years.
1. Separate data on the automotive industry are not available.
NOTE: Definitions of industry groups have changed over the years. Industry group data are not strictly comparable 1977-1984.

The European Common Market is another example of a free trade area (FTA). FTAs are permitted under the General Agreement on Tariffs and Trade (GATT), a treaty among most of the trading nations of the world, which sets the framework for trade restrictions and negotiations. GATT came into existence after World War II as a mechanism for promoting trade among nations. GATT negotiations for furthering international trade are taking place in Punta del Este, Uruguay. The Canada-U.S. accord is almost certain to have an impact on the Uruguay Round of GATT negotiations by signaling a further relaxation of free trade barriers among nations. Continued safeguards could have a negative effect.

Canada is this country's biggest trading partner: nearly 19 percent of our two-way trade takes place with Canada. For Canada, the relationship is far more important. Two-way trade with the United States accounts for 71 percent of Canada's foreign trade. In 1987, the two-way flow of goods and services between our two countries amounted to about $140 billion, an amount greater than that between any other two countries. Three-fourths of this trade is duty free. Removing tariffs altogether would substantially increase the two-way flow. Canada imposes tariffs that average 10.4 percent on items that it protects from foreign competition whereas the U.S. average is only 3.3 percent. U.S. "invisible barriers," however, are not inconsequential. Another factor is the sheer size of the American market, ten times that of the Canadian domestic market. For Canada, the compelling reason for ratifying the trade deal is fear of being left out of an increasingly protectionist U.S. economy. With free trade, the Canadians have a distinctive advantage against third-world countries selling here.

A CHANGED WORLD SINCE 1965

Autopact was born in 1965 during a period of relative tranquility on this continent. Few automotive imports disturbed either country's automotive industry.

Honda began making cars here in 1981, and Nissan, trucks in 1982. Since then, Toyota has a joint venture with GM to produce cars in California, Mazda has initiated production in Michigan, Toyota has an assembly plant in Kentucky, Mitsubishi, one in Illinois, and Subaru-Isuzu in Indiana. Not to be outdone, Canada has attracted transplants that will build Hondas, Suzukis, Toyotas, and Hyundais.

In the United States, the transplants are located in foreign trade zones. These are designated areas that enjoy exemption from U.S. duties until their products leave the area. They escape altogether if the products leave the country from the foreign trade zone.

On the other side, the Canadians have reinstituted duty remissions as a means of subsidizing the transplants. Under this scheme, companies that both export from and import to Canada enjoy a duty remission against their imports to the extent that they create value added in Canada, which is then exported. In essence, this is a subsidy provided for vehicle export to the United States from Asian transplants. For example, Chrysler Corporation will start importing its Eagle Vista from Thailand into Canada duty free because of its surplus in exports of vehicles and parts from Canada to the United States. Washington also is vexed, because it had a similar duty remission scheme—a forerunner of Autopact—which was rescinded as a result of Autopact.

In the U.S.-Canada Free-Trade Agreement, the parties have agreed to phase out incentives to third country automobile companies to locate plants here. Over a period of five years, aftermarket parts tariffs will be eliminated along the with embargo on the import of used cars into Canada. In addition,

> Canada has agreed that no additional companies producing vehicles in Canada may qualify as eligible manufacturers under provisions similar to those in the Auto Pact. The United States undertakes not to introduce comparable programs without consultations.
>
> The Parties have agreed to apply a new rule of origin for vehicles traded under the provisions of the FTA Agreement based on 50 percent to direct cost of manufacturing.
>
> The Parties recognize the continued importance of automotive trade and production for the respective economies of the two countries and the need to ensure that the industry in both countries should prosper in the future. As the worldwide industry is evolving very rapidly, the two Governments have agreed to establish a Blue Ribbon Panel to assess the state of the North American industry and to propose public policy measures and private initiatives to improve its competitiveness in domestic and foreign markets. The Governments of the United States and Canada also agreed to cooperate in the Uruguay Round of multilateral trade negotiations to create new export opportunities for North American automotive products.
>
> Canada and the United States each shall endeavor to administer the Auto Pact in the best interests of employment and production in both countries.[4]

TRADE EFFECTS

Experts disagree on the net effects of free trade between our two countries because of uncertainty over the potential for increased deficiencies among industries on both sides of the border. There is some agreement, however, on industries that would benefit. According to an analysis by Paul Wonnacott, published a year ago, "a number of industries stand out as candidates for U.S. expansion and Canadian contraction—most clearly furniture, but also chemicals, electrical equipment, and miscellaneous manufacturing. On the other side, Canadian strength was identified in forestry products, paper, and urban transportation equipment."[5] Wonnacott predicts net gains from trade for both countries, with Canada enjoying the larger gains because of economies engendered by access to a market ten times its own in size.

Michigan already conducts more trade with Canada than does any other state. Most of Michigan's exports are Canada bound. The bulk of our exports are automotive or automotive related and leave the state under the aegis of Autopact. Under the free trade agreement, any additional impediments to the free flow of automotive products will be eliminated. For example, replacement parts will flow freely.

According to the most recent Economic Report of the President,

> in agriculture, several significant quantitative restrictions will be liberalized, in addition to the elimination of tariffs and export subsidies. The United States has a comparative advantage in most fruit and vegetable trade. Seasonal quantitative restrictions remain in place, but they are relaxed under the agreement. Import restrictions on poultry products also will be lessened. Of general significance to agriculture, trade in fertilizers and other agricultural inputs will be liberalized.[6]

The President's report goes on to note that

the Canada-United States Free-Trade Agreement is the first major agreement to apply binding rules to trade in the services sector. Scores of service categories are covered, including telecommunications network-based enhanced services, computer services, professional services (accountants, architects, engineers, scientists, management consultants), tourism, insurance, construction engineering, and retail and wholesale trade. The basic principles underlying the agreement for services are national treatment (equivalent treatment of foreign and domestic nationals), access to domestic distribution systems, establishments of a commercial presence, transparency of rules and procedures, and dispute settlement arrangements.[7]

EFFECTS ON MICHIGAN

The Office of Canada, International Trade Administration of the U.S. Department of Commerce, has prepared trade benefit analyses for each of the fifty states. Besides automobiles, Michigan is the leading producer of office furniture, partitions, and other metal fixtures. Since Canadian tariffs against these products are formidible, eliminating them would improve our export prospects. The final outcome is not altogether clear. However, as Wonnacott observed, the Canadian office furniture industry is relatively healthy.[8] Michigan's advantage, accordingly, stems from its proximity to Canadian markets.

Canada has a clear advantage overall in forestry products. However, Michigan has a number of state-of-the-art papermaking plants, whereas the paper industry in Canada relies on outdated machinery.[9] Also, Michigan's producers of hardwood for flooring are well positioned to take advantage of Canada's booming construction industries. Softwood lumber producers along with newsprint manufacturers will face tough competition from the Canadians.

On the import side of the ledger, Michigan can anticipate greater energy security as a consequence of the agreement. Canada is precluded from imposing restrictions on exports of petroleum, natural gas, and, with some reservations, electricity.

SOUTHEAST MICHIGAN

Under the 1965 Autopact, North American vehicle manufacturers rationalized their production. Generally speaking, the Canadians specialized in assembly while parts manufacturing grew in the United States. The Canadian industry lost much of its autonomy under Autopact, with the result that much of the administration, research and development, and other white-collar types of activity shifted to the United States, particularly Michigan, the heartland.

Most of the adjustment in the automotive sector already has been completed. In general, Michigan has gained white-collar and high-tech jobs but not at a rate sufficient to offset losses in factory employment.

Michigan, like much of the rest of the Midwest, is burdened by a labor cost disadvantage resulting from the depressed Canadian dollar along with sharp differences in fringe benefits, especially costs of health insurance. This situation is changing with appreciation of the Canadian dollar and health cost containment programs here.

Steel, already a crippled U.S. industry, will feel the effects of Canada's comparative advantage in standard items. In specialty items, such as electro-galvanized metal, Michigan has the upper hand. Michigan's plastics fabrication industry, which is highly specialized, also will benefit.

In goods production generally, the shift likely will follow the pattern engendered by the Autopact itself: more routine, standardized types of production growing more rapidly in Canada; and Michigan specializing in lower volume, higher value-added specialty items. These changes will be based largely on the decisions of multinational corporations which do the bulk of exporting from both of our countries.

In general, Southeast Michigan has an advantage in being the largest agglomeration of industry on the U.S.-Canada border. Thus it has the public and private infrastructure and network to take advantage of the Canadian market; Ontario, Canada's largest province, is just across the river from Detroit. Wonnacott makes a case for border economies.

> Nevertheless, there would be some gains, particularly for US firms in areas near the Canadian border that will benefit from improved access to the Canadian market—a market roughly the size of the section of the United States from Milwaukee to the northern border of California. Although access to the Canadian market would not make a great difference to the average US firm, it could be quite important for specialized firms occupying market niches. This type of gain—to smaller, specialized firms—is not picked up in the comprehensive economic models, which must of necessity deal with major industries.
>
> Furthermore, there would be another source of gain to US businesses: insofar as free trade contributed to a major expansion of the Canadian economy and an increase in Canadian incomes, Canada would be in a position to buy more US exports. The best foreign market for US would become even better.[10]

The ITA study makes the following points:

> —The FTA facilitates the entry of certain MICHIGAN business professionals traveling to Canada through the implementation of simpler border crossing procedures. This will enable those individuals to provide their expertise and after sales service with more certainty and less delay at the border.
>
> —The FTA enhances service trade opportunities for MICHIGAN businesses by providing that future Canadian laws and regulations affecting trade and investment by American service providers will be nondiscriminatory.
>
> —The FTA covers dozens of services in the agriculture and forestry; mining; construction; distributive trade; insurance and real estate; and commercial service sectors.
>
> —Michigan firms will be assured the right of establishment of a commercial presence, the right to sell across the border, and greater transparency in Canadian regulations.
>
> —The FTA ensures that open markets for tourists and tourism service providers will continue for this important MICHIGAN industry. When the MICHIGAN tourism industry provides services to a Canadian visitor, that is an "invisible" export.
>
> —Future licensing and certification requirements for MICHIGAN residents providing professional services (such as accountants and engineers) will be based primarily on competence and ability—not citizenship.[11]

EFFECT ON DETROIT

There is a basis for Wayne County/Essex County cooperation in transportation, since Windsor has better uses for some of the land now devoted to transportation. This presents an

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opportunity for Detroit to develop a multimodal system based on the vast railroad marshalling yards and track already located here.

With an open border, the geographic center of gravity for southeast Michigan is shifted eastward. The downtown business district becomes more in the center of things. Promoting Detroit as the centerpiece of the Detroit-Windsor area puts Cobo Hall in the middle of the area in the minds of visitors. A major new downtown hotel becomes more feasible. Office buildings make more sense in the downtown area.

Astride an unfettered international border, Detroit is a logical center for legal, accounting, and other services that will come into being to interpret the agreement and to lobby in Ottawa, Toronto, Washington, and Lansing for legislation or for regulations that will diminish the paper barriers to trade. These barriers are differences in food purity laws, regulations regarding labelling, standards in mobile home construction, and the like.

Small and medium-sized businesses on both sides will experience increased opportunity for growth because of access to the other side. This is true not just for goods producers but also for the service industries. It is this least encumbered, most unpredictable, most risk-taking class of business that offers most promise for job creation on either side. Small businesses, especially those in the services industries, seem particularly likely to benefit if they are located near the border of our two countries.

Additional jobs in lodgings, specialty retailing, and entertainment industries; in office buildings and transportation industries; in hospitals and law offices; and in advertising, data processing, building services, consulting, and other business services mean more spin-off jobs in grocery stores, repair shops, personal services, and a variety of other "local" industries. The job impact is impossible to measure because it depends on business acumen and personal initiative among Detroiters and among Windsorites. A free-trade, greater Detroit-Windsor area creates opportunities for those so inclined. The degree to which those opportunities will be exploited cannot be predicted.

Inasmuch as the agreement is provisional with details still to be worked out, there is a great deal that cannot yet be said. Its essence is freer trade between the two countries, less unilateral decision making by either country regarding trade with the other, and greater trust and cooperation between our two countries.

One of the ways that Southeast Michigan can get a head start on other areas in taking advantage of the agreement is by targeting those industries that are best placed and most interested in moving in the direction of greater trade with Canada. Detroit can capitalize on its strategic location to create a new industry which would deal with facilitating free trade between our two countries. Being the largest city on the border and host to the largest volume of trade flow between our two countries, it is the sensible location for a Canada-U.S. Trade Center. The center would employ specialists in interpreting the agreement, assisting businesses in exporting and importing goods and services between our two countries, and in lobbying governments to reduce the bureaucratic and regulatory barriers to trade.

NOTES

1. The author expresses his gratitude to William J. Kohler and Marc Santucci for guidance on interpreting the free trade agreement with Canada. Mr. Kohler is an attorney with Miller, Canfield, Paddock and Stone in Detroit. Mr. Santucci is Advisor to the Governor on Trade Policy and a consultant whose firm, ELM International, Inc., is located in East Lansing.
2. *Data Relating to H.R. 9042, Automotive Products Trade Act of 1965* (Washington, D.C.: 1965), 30.
3. Carl E. Beigie, *The Canada-U.S. Automotive Agreement: An Evaluation* (Washington, D.C., and Montreal, Quebec: Canadian-American Committee, 1970), 55.
4. *Preliminary Transcript Canada-U.S. Free Trade Agreement, Elements of the Agreement*, 4, 5.
5. Paul Wonnacott, "The United States and Canada: The Quest for Free Trade," *Policy Analysis in International Economics* 16, (Institute for International Economics: 1987), 36.
6. *Economic Report of the President* (Washington, D.C.: 1988), 133.
7. Ibid., 134-35.
8. Wonnacott, 37.
9. Wonnacott, 37.
10. Wonnacott, 42.
11. *Benefits of the U.S.-Canada Free Trade Agreement for Michigan* (Washington, D.C.: The Office of Canada, International Trade Administration, 1988), 4.